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Diary Dates

April 24 – 26
BSHP Spring Conference
Venue: Cliff Tops Hotel, Shanklin, Isle of Wight
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President's welcome to Shanklin
Dinner and Speaker

Saturday April 25
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11.30 Annual General Meeting
Lunch
Afternoon Free – Possible tour of Isle of Wight and/or Carisbrooke Castle
Dinner and Speaker

Sunday April 26
9.30 Conference Papers
Lunch

The Conference Papers include the following:

Dr. Allen Insole: 'Early Mediaeval Herbal Medical Manuscripts'

Mrs Joanna Jones: 'Embryonic 18th Cent. Health Service?'

Mr. John Steane: 'The Maynard Family of Apothecaries'

Dr. J. Ewell: 'The Hoffmeister Connection'

Dr. J.G.L. Burnby: 'John Channing : Arabist and Apothecary'

Dr. James Thomas: 'Haslar Hospital'

Cost £75 per person sharing a twin or double room. £80 per person in a single room.
Discounts on travel arrangements (see President's message).

May 21
Dr. C. Hillam, 'History of Dentistry'

A Message From The President

" This year's Spring Conference is being held in a most appealing and delightful area of the attractive Isle of Wight.
The Cliff Tops Hotel with 'A.A.' and 'R.A.C.' 3-star ratings overlooks the English Channel and provides an excellent setting for the Conference at a time of the year when Shanklin is relatively quiet but with the weather daily moving from Spring to Summer. In addition to the special conference rates, substantial savings on travel (up to 50%) have been negotiated. These include British Rail fares, Sealink, Catamarans and Car Ferry bookings, provided application is made in conjunction with the Conference booking through the BSHP Secretary, 36 York Place, in the usual way.

1987 celebrates 20 years existence of the BSHP; please make it a year to remember by attending the Spring Conference. "

John Steane

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Brockedon's Press

By W.A. Jackson

It has become commonplace in recent years for British inventions, having failed to obtain financial backing, or to be promoted successfully in this country, to be developed abroad. We tend to think that this is a recent phenomenon, but at least one example is to be found in pharmacy in the 19th century, – the production of pills (or tablets as they became known later) by compression.

On December 8th, 1843, William Brockedon, a manufacturer of Cumberland leads for pencils, submitted his Patent Specification (No. 9977) for "Shaping Pills, Lozenges, and Black Lead by Pressure in Dies.", and this was enrolled on June 8th, 1844. Although bricks and tiles had previously been compressed in moulds before firing, this patent was the first to use pressure in dies as a means of manufacturing pills or lozenges from materials in a state of granulation, dust or powder.

The first part of the specification describes the simple die and punch which were made of steel. It consisted of three parts: the base, which had a central raised pillar with a concave upper surface, a collar which fitted over the pillar and was sufficiently deep to leave a cavity above it, and a punch which had a concave lower surface and fitted into this cavity. In use, the granules or powder to be compressed were placed in the cavity formed by the two lower pieces of the press, the punch was inserted, and the consolidation achieved by means of one or more blows to the top of the punch. Most of the examples I have seen show evidence of having been struck repeatedly with a heavy hammer. Brockedon's original apparatus is illustrated in 'In Pursuit of Excellence'[1], and two later variations are shown in the accompanying photograph. The patent mentions the possibility of using different shapes of dies for the production of medicated lozenges, but I have yet to find evidence that any were made.

The second part of the patent describes a measuring device which could be adjusted to take up the required amount of raw material to be compressed, and to deposit it in the cavity of the die. It consisted of two concentric tubes with a central plunger, and must have taken some time to adjust accurately for each run of tablets. An even greater objection was that it was loaded by pressing it into the bulk of the material to be processed, which would be difficult to achieve without compressing the powder in the tube by a variable amount each time it was loaded. This problem was recognised by Brockedon, and he mentions it in the specification, a fact which leads me to suspect that he had experienced difficulty in obtaining pills of constant weight when using it. I can find no mention of this, apart from the prototype, being made or used.

The third part of the patent described a pump to be used for extracting air from the dies before compression, but this was considered to be necessary only for the making of fairly large blocks of black lead from the graphite dust, and was not used in making medicinal products.

In May, 1844 The *Pharmaceutical Journal* reported that Mr. Brockedon had submitted a specimen of bi-carbonate of potash compressed into the form of a pill, and that it was understood that the process was applicable for a variety of other substances "without the intervention of gum or other adhesive material".[2] It is known that he used his invention to manufacture and sell a small range of compressed products, and in 1871, Francis Newbery and Son purchased the rights and title to manufacture and sell these.[3]
"Brockedon's Patent Pills" are listed in their 1874 catalogue. In 1932, Mr. A.J. Bullen, Ph.C., of Gloucester Road, London arrived at the editorial office of The *Pharmaceutical Journal* with two old leaflets issued by Newbery's, – one headed "Brockedon's Patent Compressed Pills, A.D. 1842. Pure Chlorate of Potass." and the other "Brockedon's: The Purest Remedies for Indigestion." He had, in addition, a circular cardboard box with its label, in white letters on a blue ground inside a white circle, reading, "Brockedon's Patent Pills: Compressed Pure Bicarbonate of Potas. Francis Newbery and Sons, London. Established 1746." This still had its original contents, ovoid tablets which are described as being "well finished for a hand-made product."[2] A third leaflet issued by Newbery's headed "BROCKEDON'S *PATENT* COMPRESSED PURE BI-CARBONATES OF SODA OR POTASS." is illustrated in *'Hobby Pharm.'*[4] This mentions that they are recommended in 'Squire's Companion to the Pharmacopoeia'. Upon looking up the reference, one finds that the actual wording is, "Brockedon's compressed pills of Bicarbonate of Potash are convenient."[5] By 1880, compressed pills or 'tablets' were being imported into this country, and it is interesting to note that in a letter to the *Pharmaceutical Journal* in 1881, Francis Newbewry and Son claimed that there had been a steady increase in the demand for Brockedon's Pills, both at home and abroad, since the introduction of the American products.[3]

The advertisements for Brockedon's Pills stressed their purity.[24] This was obviously seen as being their greatest advantage over pills being produced by conventional methods. Unfortunately, the number of substances which could be compressed satisfactorily without any additives was very limited, and it seems probable that it was American research which resulted in the addition of lubricants, disintegrants and, where necessary, dilutents to the material to be compressed, as well as the necessity of granulating the resulting mass if it was to be tabletted successfully. In addition, machines which were more efficient in producing such products were being designed. Jones[6] mentions several which were available for use in pharmacies in the U.S.A.: – Remington's Pill Press (1875), Dunston's Pill Machine (1876), and Nelson's Tablet Compressor (1897). Others had been produced in which compression was achieved by a simple lever or screw press: – Rosenthal's Screw Press (1872), Perfection Tablet Machine (1895) and Killian Tablet Machine (1897). As early as 1872, Johny Wyeth and Brother were using a hand-operated automatic press designed by Henry Bower, and it is believed that the term 'compressed tablet' was first used by them.

It is believed that the main reason for Burroughs and Wellcome establishing their business in the United Kingdom in 1880 was that they saw the potential for the sale here of tablets, which were becoming so popular in America. Their price list for 1896, which contains 365 different types of tablet, demonstrates the soundness of their reasoning. They are thought to be the first company to use the word 'tablet' in Britain, but in 1884 registered the trademark 'Tabloid' for this

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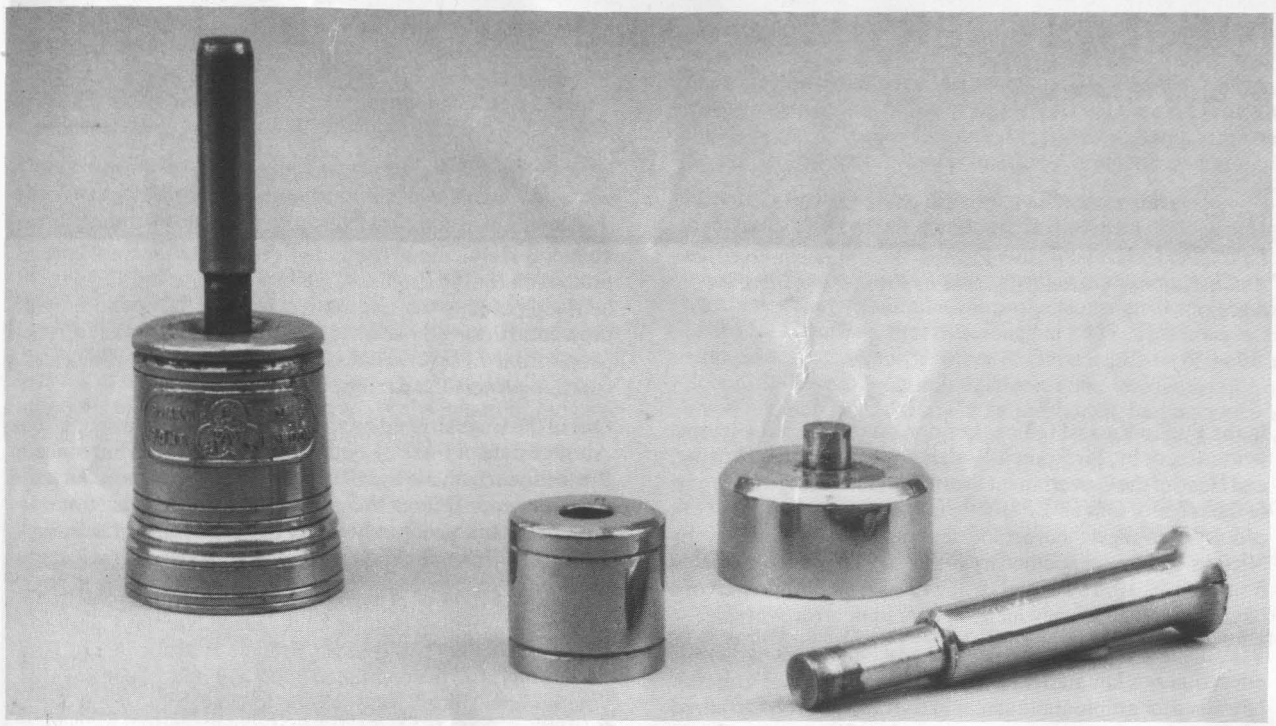

Two examples of Brockedon's Press. Left, by courtesy of Dr. G. Benson. Right, from the author's collection.

type of product. (In later years this trademark was used by them for a much wider range of goods.)

There must have been some justification for Newbery's claim that there was still a good demand for the Brockedon range of products, for Burroughs and Wellcome thought it worth their while to purchase the rights to manufacture and sell these about 1898. They were issued in a similar pack, using a circular label with white letters on a blue ground with "BROCKEDON" BRAND PILLS' in heavier type than their own name.[1] Further confirmation is provided by the fact that a price list of 1928 still contains "Brockedon" Brand Compressed Pure Bi-Carbonate of Soda, Pure Bi-Carbonate of Potass., and Pure Chlorate of Potass.[7]

Jones[6] quotes from The *Pharmaceutical Journal* of 1895 that "The most universal custom has been to purchase tablets from the manufacturer or wholesale dealer and retail them in the same manner as sweetmeats, the pharmacist thus entirely sinking the professional aspect of his calling and dealing with the compressed medicine as a tradesman pure and simple." How often have we heard similar sentiments expressed in recent years? By 1898, several types of tablet machine were being produced for use in English dispensaries. In addition to the simple Brockedon Press, Lucas[8] illustrates the Pazo Compressor, a lever-operated machine which took up little space, and was particularly suitable for dispensing purposes, as well as two hand-operated wheel-driven machines, – Holroyd's No. 5 (capable of producing 40 tablets a minute), and The Keystone No. 1, which could turn out 70 to 100 tablets per minute. Bt this time however, it had become uneconomic to produce tablets in small quantities in the dispensary, although it must still have taken place to some extent, it being thought worthwhile to include advice on the process in the 1898 edition of 'Pharmaceutical Formulas.'[9]

Today the name of William Brockedon is familiar only to those pharmacists who are interested in the history of their profession, but it is probable that his invention had a greater effect on our lives than the work of any of the well-known pharmacists of the past 140 years. It paved the way for the introduction of generic medicines, made in factories and obtained through wholesalers, into our dispensaries, and in so doing, started the decline and eventual demise (for all practical purposes) of dispensing 'secundum artem'.

Acknowledgement

The author wishes to thank Miss M.F. MacKenzie of the Pharmaceutical Society's library for her assistance.

References

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NICOLAS CABRY Master-Apothecary of Paris *

By Leslie G. Matthews

Four letters addressed to Sir Francis Walsingham, sometime Ambassador of Queen Elizabeth in France, during the 16th century.

In the Public Record Office, London, there are many letters written to, or by, Sir Francis Walsingham, statesman, lawyer, and Head of the Government Secret Service during a large part of the reign of Queen Elizabeth, in the latter part of the 16th century. Amongst them are four letters sent to Walsingham by Nicolas Cabry, an apothecary of Paris. The letters are dated from August 10, 1582 to May 31, 1584.[1] They form part of a larger correspondence which appears to be irrecoverable.

Walsingham was born about 1550 and he had his early education as a law student at Gray's Inn, London. Thereafter he trained for a diplomatic career in Europe, where he acquired a knowledge of languages that was to be of immense value to him in his life's work.[2] The Lord Treasurer Burghley employed him as a special foreign secretary, because of his widespread correspondents in many parts of the Continent, and Walsingham developed this circle of acquaintances into a well-knit group that provided him with a regular stream of 'under-cover' information.

He showed such gifts for diplomacy that he was often employed on special missions and in the autumn of 1570 he was sent to Paris to assist the English Ambassador, Sir Henry Norris, at a time when the English Government desired to press the French Government to extend toleration to the Huguenots.[3] The French gave the assurances hoped for, and Walsingham was back in London by the end of the year.

His next important task was to continue the delicate negotiations concerning the marriage of his Queen, Elizabeth, to Henri, Duc d'Anjou, the brother of King Charles IX. It was thought that these negotiations, which had been in progress for some years (and which Elizabeth was not anxious to bring to fruition – nor was she eager, for political reasons, to break them off), needed the exceptional skill that Walsingham possessed and he was chosen therefore to replace Sir Henry Norris in the conduct of the affair. His instructions were to protract still further, by every artifice he could use, a decision on either side.

Walsingham left Dover for Boulogne on 1st January, 1571 and, except for a short leave of absence in England at the end of that year, continued in France until April, 1573.[4] Thus it was that he found himself in Paris, where he lodged with his wife and child in the Faubourg St. Germain, in the crucial days of the massacre of St. Bartholomew, and particularly on the night of 24th August. (It is evident that no news of the intended action against the Huguenots had reached Walsingham for, as his dispatches make clear, he was totally unaware of what was coming.) He obtained from the French Government special protection for the English Embassy and was thus able to befriend not only the English residents in Paris who sought protection during those uncertain days but also many French people from the severe risks of the time. The French King sent a guard to protect the Embassy.

One of the English residents, Timothy Bright, in his book 'The Abridgement of Foxe', London, 1589, writes: "That especial Protection .. hath always bound me with all bonds of duty and service to your Honour. Your Honour's house at that time was a very sanctuary, not only for all of our nation but to many strangers then in peril and vertuously disposed."[5]

It was this action of Walsingham's in affording protection to 'strangers', we may assume, that caused Nicolas Cabry to refer in his letter (No.4) to Sir Francis Walsingham of 10th June, 1587, to "the continued good will that I bear towards your Honour since it was my good fortune to know you during the time of that bloody St. Bartholomew, whilst I had the honour to serve you at your lodgings ..". As already stated, Walsingham had his lodgings at that time in the Faubourg St. Germain. It is quite possible that Nicolas Cabry, or his brother, to whom he refers, was one of the 'strangers' who was befriended on the occasion of the massacre. As will be seen, Cabry and his relatives all lived in an area close to the Embassy. Whether any of the Cabry family were befriended or not, it is clear from the correspondence that Cabry was an important supplier to Walsingham during the time that the latter was living in Paris. Indeed, Cabry may have been the regular provider of drugs and spices to the Walsingham household for the whole of the period that he was in France.

Unfortunately, although many of Walsingham's own letters are preserved and are available for study, there are none that he wrote in reply to Cabry, though Cabry mentions receiving letters from Walsingham. Walsingham's journal[4] makes no mention of his contact with Cabry. We know, however, that for a part of the time that Walsingham was in France that he was in poor health, for he records that in November, 1571, "I began my Diet"[4], and in a letter to Lord Burghley, written from Paris on September 16, 1573, he writes that he is under the physician's hands, and is hoping to avoid a continual fever.[6]

Cabry's letters tell us something of his own life. He was in Paris for most of his time, where he practised as an apothecary – letter No.4, quoted above. That he was well-known and by implication a man of standing, appears from his statement that he must compound the two preparations – *Mithridate de Damocrat* and *Confection d'Alchermes* in the presence of Paris doctors and apothecaries – letter No 2, and indicated membership of the Commuauté des Espiciers-Apothicaires. Cabry lived for four years in Constantinople, where he interested himself in drugs then in use in the Levant – letter No.4. He maintained close relations with the friends he made while there and evidently was constantly receiving rare and unusual drugs and spices from them. His friends appear to have

* Published in French in *Revue d'Histoire de la Pharmacie* 1961

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been drawn from all ranks or they employed questionable intermediaries, for one of them he refers to as a renegade (i.e. a Christian turned Moslem), and "now in the Seraglio of the Grand Turc" – letter No.1. Cabry continued this traffic in Levantine drugs, at least until 1587 – Letter No.4.

Cabry was obviously on good terms with Walsingham and there was frequent correspondence between them. The letters are apparently sent from Walsingham's house in Paris, although letter No.1 has a reference to Constantinople, a possible mistake or oversight by Cabry. Cabry is equally conversant with French, Latin and Italian: Latin he uses for directions to Walsingham for the administration of medicines – letters Nos.1 and 2; Italian he seems only to use for special secrecy as in letter No.4, perhaps knowing that Walsingham's letters would be recorded by clerks. Walsingham would have had no difficulty, he was an expert linguist.

The letters also shed light upon Walsingham's own interests, one of which was a keen preoccupation with his own health. Apparently he was always willing to try out rare or unusual drugs. He is known to have received treatment in England from 'Quack' doctors: he tried more than once to prevent the College of Physicians from restraining certain charlatans from continuing their unlicensed practice but he did not succeed in this and the College suppressed them. Whether Walsingham feared poisoning is not recorded but there seems to have been some such thought in Cabry's mind since he sends a supply of unicorn's horn, with full directions for taking it – letter No.2. The readiness with which persons took strange remedies in the reign of Queen Elizabeth was remarkable. Walsingham obviously liked sweetmeats, as did most of his generation, and doubtless he appreciated the two supplies of 'moscardins', probably the pastilles flavoured with musk – letters Nos.1 and 3. He seems to have suffered either from obesity or callosities (probably the latter, as did the 'gentleman of Provence'): if so, he would have been pleased to receive the box of ointment "to dissolve every carnosity" – letter No.4. Presumably Walsingham was a collector of 'Bibelots', as Cabry tells him of the opportunity of acquiring antique silver medals, idols of Isis found in the ancient mummies, and other things – letter No.1.

The information gained about Nicolas from the letters themselves – his professional status as an apothecary in Paris – are supported strongly by the information available in the *Bibliothèque Nationale* and in the *Archives Nationales*, Paris, and also by the details that have been kindly furnished by M. le Docteur Maurice Bouvet, *Président de la Société D'Histoire de la Pharmacie de France.*

Nicolas seems to have been the grandson of Fiacre Cabry, portier de la porte de Bucy. Fiacre's son married Catherine Bouden, and Nicolas and Pierre were two children of that marriage[7]. There appear to have been other children – see Notes. Nicolas is described as "marchand, maitre appoticaire et espicier". In December, 1563, he was sworn to act for two years – 1564/1565 – as one of the two *'tonelliers deschargeurs de vins"* of the City of Paris[8]. Most of the Cabry family (and all appear to have married into good bourgeois families of moderate wealth), as well as many of the relatives by marriage, lived in or near the parish of St. André des Arts, and close to the churches of St. André – no longer existing – and St. Severin; within an area on the South Bank now bounded by the rue de Seine Tournon, Boulevarde St. Germain, rue St. Jacques and the Quais St. Augustin and de Conti[9].

Bouvet informs me that Nicolas was "received Master of the Apothecaries and Spicers in April, 1583", and that he was "Garde-Apothecaire de la Communaulté" in 1605 having been elected to that office in 1604[10]. At the time of his death, which occurred before October, 1615, he was living in the rue St. André des Arts. Nicolas married Antoinette du Val[11].

Nicolas's brother Jean, described as "marchand et bourgeois", and who is mentioned in the letters, though not by name, married in 1577 Marguerite Doynet (or Douenet), widow of Pierre Prévost, "marchand et bourgeois de Paris", and through her, Jean came into possession of an historic house called Le Moulinet, first mentioned in 1427. This house was situated at the west corner of rue St. Séverin in front of the little door of St. Séverin's church. Jean also came into possession of a house which his mother, Catherin Bouden, had built near a tower adjoining the porte de Bucy: this house he ceded to his brother, Nicolas, on 11th October, 1601[7].

This Cabry correspondence, fragmentary though it is, gives an indication of the friendly relationship existing between an important apothecary of the 16th century, one who was well established in his profession in Paris, and an English Ambassador to the French Court. The Ambasssador for many years, and probably up to the time of his death in London, in 1590 continued to buy special drugs from this apothecary.

La Famille Cabry

Fiacre Cabry
Portier de la porte de Bucy (Bussy), Paris.
Grandpère de Nicolas et Jean.
Son fils épousait Catherin Bouden. Les enfants du mariage etaient *Nicolas* et *Jean.* Qu'il y avaient autres enfants?

Nicolas Cabry
Marchand, maitre-apothicaire et espicier et bourgeois de Paris. Pendant deux ennées, 1564/1565, un des deux tonnelliers deschargeurs de vins a Paris.*
Épousait Antoinnette du Val, qui est morte avant 1615 (Le frère d'Antoinnette fut Guillaume du Val et sa femme etait Renée Rossignol). Nicolas demeurait dans la rue et dans la paroisse St. André des Art. Il est morte avant 1615.

Jean Cabry
Marchand et bourgeois de Paris.
Épousait Marguerite Doynet (ou Douenet), veuve de Pierre Prévost, marchand et bourgeois de Paris. La maison appelle "Le Moulinet", dans la paroisse St. Séverin apartennait a Prévost.

Anne Cabry
Épousait
1. Denis de Leau qui etait Sergent à verge en Chatelet.
2. Jacques Compaignon, practicien, en 1601.

Pierre Cabry
Marchand et bourgeois de Paris. Il épousait Jeanne Dagrumeau. Suivant le décès de Pierre, Jean épousait, en 1594 ou 1595, Elie Francois, maitre horloger, qui demeurait dans la rue Hauteville, paroisse de St. Séverin. La fille de Pierre et Jeanne (Guillonnette) épousait, en 1596, Claude de Rencourt, marchand mercier.

Phillipe Cabry
Épousait
1. Etienne Morin, maitre tailleur d'habits, en 1570. Ils

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demeuraient dans la rue St. André des Arts.
2. Jacques Le Maistre, en 1581, Sergent à verge du Chatelet, qui demeurait a la porte de Bucy, Egalement il etait prévote et vicomte de Paris.

* 1563 Presentation de Portier – Tonnelliers, procureurs de la communaulté, du jeudi, XVIe décembre mil Ve LXIII.

"Ced jour, Nicolas Coult et Nicolas Cabry ont este receuz au serment, accoustume de Mes et procureurs de la communaulte des jurez tonnelliers deschargeurs de vins a Paris pour deux ans."

La Maison appellée 'Le Moulinet'
Cause de la maison du Moulinet rue St. Severin, adjugee a la censiv de la ville.
'La maison du Moulinet (mentionné dès l'année 1427) faisant le coin occidental de la rue St. Séverin. En 1546 elle etait occupée par Catherine Belin, les héritiers de celui ci en firent cession a Pierre Prévost dont la succession fut receuillé en 1577 par Jean Cabry, Mandement a Jehan Jodelet ... remonstrer que la maison du Moulinet, St. Séverin, est la censive de ladicte Ville ... joictz et prenant cause pour Jean Cabry et Marguerite Douenet, sa femme, fille du Mathurin Douenet,..ordonné que la contract ..seront reformé."

"Catherin Bouden avait obtenu de la ville, le 13 aôut 1580, le bail pour quarante années et moyennamt une redevance de cent sous par an d'un terrain a bâtir pres d'une tour joinant la porte de Bucy (Bussy), terrain qui avait .. baille anterieurement a Etienne Morin. Elle épousa le fils du Fiacre Cabry, portier de ladit porte de Bucy, et fit bâtie une maison sur l'emplacement en question. Après son décès, la bail continue pour le temps qui restait a courir, par acte du 27 nov. 1600, a Jean Cabry, marchand et bourgeois de Paris, son fils, qui luimeme le ceda. Le 11 oct. 1611, pardevant notaires, a son frère Nicolas Cabry marchand apoticaire et épicier, ce qui ne fut ratifié par la Ville que le 4 décembre 1604."

Les Drogues Mentionnees Par Nicolas Cabry

Lettre No.1	Bol Armeny, 35 pains – por ses signalles effects Theriacque Metridae Terre Selle Pierre de Licorne (Unicorne) Bausme de Judee Vray Amome (? Amomum racemosum – Cardomomes) Vray Costus (Costus arabicus) Manne du Liban
Lettre No.2	Cierre (Pierre) de licorne Vraye Bausme (de Judee) Vray Albotin (synonym – therebintine de Scio)
Lettre No.3	Une piesse Licorne orientale Theriac du Caire Semence du vray Amome (una scatola di onguento per dissoluere ogni carnosita)

Cabry fournassait deux quantitées des muscardins.

Addenda:

i. Nicolas Cabry était-il Catholique? On ne trouve pas son nom dans *La confrerie de Saint-Nicolas des apothicaires et des éspiciers de Paris.* par M. Bouvet (Paris 1950).
ii. Authorisations a faire le trafic dans les drogues importées en France – voir Lettres patentes, Article IX, ordonné par Francois II, novembre, 1560. (Bouvet: Histoire de la Pharmacie en France, Ed. Occitania, Paris, 1936, p. 188)
iii. Les drogues d'Orient sont fréquemment adulterées. Il y avaient beaucoup d'importations dans le seizième siècle – voir les Statuts cités à propos les 'forains'. Bouvet: op cit. p. 187)
iv. Le corne de licorne est mentionné par Bouvet op. cit, p. 167
v. "En novembre 1560, Francois II confirme l'union des apothecaires et des epiciers dans une même communauté", etc. (Bouvet op. cit. pp. 280/81)
vi. Composition du Thériac. "A Marseille (1574), les apothicaires ne peuvent mélanger les ingredients des 'compositions de conservation', telles que la thériacque, le mithridate, la confection d'alkermes, etc., sans aient été verifiés par les prieurs et les médicins de la ville. Les mêmes formalitiés sont prévues a Paris par l'arrêt du Parliment du 3 aôut 1536..." (Bouvet: op. cit. p. 182)

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7 Régistres des Déliberations du Bureau de la Ville de Paris, Imp. Nat. Paris, 1829, Tome XIIe, p.557-Note A.
8 *Ibid.* Tome Ve, p.338
9 Plan des Paroisses de Paris – Junie – per de Vilevault et M. de Bréquigny, L'Imprimerie Royale, 1782/6, Arch. Nationales.
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The Channel Islands During The German Occupation *

By John Kelleher

The outbreak of war in 1939 was a shock to many Channel Islanders, but its significance was somewhat diminished by its physical distance from the Channel and the fact that the Islands themselves were too small either to play a major role or to be considered of any strategic significance. The phoney war, however, came to an abrupt end, and in June 1940 British forces were withdrawn from the Islands. With the troops went a large number of evacuees, mainly women and children, leaving Alderney near-deserted and removing two-fifths of the population of Guernsey. The situation rapidly took on a new perspective. By July the German forces had arrived and occupied the Islands, intending them to be a springboard for the invasion of Britain. In the event, they remained in the Island for nearly five years.

It is important to emphasise that whilst one may make generalisations and draw conclusions from the various medical reports, German files and war diaries etc, the Occupation remained a personal experience for every individual involved. How one lasted out the war depended on a number of variables, such as economic status, occupation, social position and personal qualities. The old were particularly vulnerable to the cold and the shortage of food, and some pensioners faced five years cut off from finances in England. For those who lived in the country, the food situation and hence, the health condition, far surpassed that of those living in the urban areas.

Throughout the Occupation the Home Office kept the food situation in the Islands under observation, piecing together observations, smuggled-out reports and aerial surveillance. They lacked essential details but nonetheless gauged the situation with a certain precision. It was their belief that the food situation up to D-Day was a close parallel to that of occupied France. Whilst the diet lacked many of the accustomed articles, health was not severely affected. It was estimated that the average intake provided no less than 2,000 to 2,500 calories per head daily. The driving out of the German forces from the Contenin Peninsula in July 1944 left the Islands isolated and the food situation underwent a rapid deterioration. Near-normal Island populations (with the exception of Alderney which was evacuated early-on) and a combined garrison of 30,000 troops were forced to depend wholly on local produce, which in peace time was nowhere near sufficient to meet requirements.

In November 1944 the Home Office decided that the food situation in the Islands was dire enough to require outside aid. The Red Cross ship 'Vega' arrived soon after Christmas bringing, as it was to do for the remaining period of the Occupation, basic monthly rations in the form of one prisoner of war parcel per head and 500 tons of flour.

Given the food situation the health of the Islanders remained remarkably high. The diet change was sudden (in terms of balance) and the disproportionate increase in vegetables (two and a half times the calorie value of the UK wartime diet) resulted in a universal loosening of the bowels, which at times nearly reached dysentry. Equally remarkable was the containment of the several outbreaks of the more serious diseases of cholera, typhus and diphtheria. At the end of the war a British medical team could conclude that apart from several minor deficiencies regarding the height and weight of children, the average health in the Islands was remarkably high.

No-one before June 1940 regarded invasion as even the remotest possibility. It was generally expected that a war of attrition would develop along similar lines to the Great War 1914-1918. The Islands relied on much imported food and feeding stuffs for animals, fertilisers for glasshouses and fields and petrol for essential services. War placed the essential lifeline in jeopardy.

The Islands were under a dual dictatorship, that of the German occupiers and that of their own governments.

The evacuation of a sizeable portion of the population of the Islands meant that immediately after invasion food stocks were relatively high. Jersey in September 1940, for example, had four months supply of canned fruit and vegetables and nearly a year's supply of sugar. Yet stocks were to be exhausted before imports from France in any quantity could replace them. With the exception of late 1944 and the period leading up to liberation, the winter of 1941/2 was to prove the worst experience of the Occupation.

Still unadjusted

By 1941 most people had exhausted their private stocks, which combined with rations had provided a fairly average diet. The majority were still unadjusted to the new food pattern and few had learned where and how to procure extras. The first shipments of flour, eggs, cheese and onions had arrived from France in late 1940. Fresh fruit readily available to the French never reached the Islands. The losses in transit were particularly high in the medical sphere. Although all diabetics had been advised to leave the Islands, many stayed. Jersey's Medical Officer, faced with a lack of the necessary drugs, placed all serious cases of diabetes in care, rigidly controlling diets and movement in order to reduce the amount of insulin needed. The required Red Cross supplies arrived with the majority of cases near to death, but the insulin, which fetched high prices on the French Black Market was missing. All the hospitalised diabetics died. The whole issue of supplies from France was further confounded by the military demanding priority shipping space for cement for defence.

** An abstract from a paper presented at the History of Pharmacy Session, British Pharmaceutical Conference, Jersey, September 24 1986.*

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When examining the effects of the Occupation on the health of the community, factors other than food must be taken into account. From a general point of view, the departure of many of the Islands' doctors prior to the Occupation must have had its effect. The Island of Sark was left without a doctor until an elderly Jersey doctor could be sent over for the duration. Another important factor was the large influx of foreign workers brought in under the supervision of the Todt Organisation as slave labour. With them came a host of skin diseases, including scabies, as well as diphtheria. The shortage of fuel and soap made washing clothes difficult and let to an increase in the spread of septic conditions and uncleanliness among schoolchildren. To exacerbate the situation, the military requisitioned the hospital in Jersey, leaving only a small section of the building for the civilian population. Likewise they took over the sterilising plant and would deal with only a limited number of sterile drums for civilian use. Other factors must include the depression and the boredom felt by many in the Islands. Most Occupation diaries refer to the psychological side of life inder German rule and the numerous suicides that resulted.

The first noticeable effect of the new rations was a universal loosening of bowels. Often it was severe enough to be called diarrhoea. It began in the spring of 1941, long before the use of locally ground flour for bread.

The experiences of the Islands' doctors suggest that the bowel problems were due to the unaccustomed coarseness of the diet. The peacetime diet was generally deficient in roughage and the stomach was thus unprepared for a new diet.

Most people suffered from flatulence and abdominal distension, particularly early on when the bread was poor. In the larger Island the condition was known as 'Jersey Rattles'. Polyuria was also common and proved a major source of irritation, especially to the elderly. Tests showed the urine to be loaded with phosphates, attributed to the salts present in the bulky vegetarian diet.

There were some beneficial effects from the situation. Loss of weight was common and for some it proved to be a source of new found energy. In certain cases, however, this was negated by flatulence. Those above the age of 40 years and inclined to corpulence lost weight during 1940/1. A Guernsey doctor told of a man who dropped 8 stone from a pre-war weight of 18 stones. Many women who had given up hope of children suddenly found themselves pregnant and this was no doubt linked to the loss in weight, particularly around the abdominal area, and the compulsory exercise due to the absence of petrol and public transport. The incidence of appendicitis, colds and new cases of peptic ulcers fell considerably. Equally, those of the obese type, suffering from dyspnoea and other symptoms stimulating chronic cardiac disease, showed remarkable improvement. Pre-Occupation dyspnoea sufferers were seen to be taking regular exercise, including cycling and long walks.

Seasoned veterans from the fronts came to the Islands for limited periods as a form of rest from fighting bringing infective gingivitis or trench mouth, ascaris and predictably, syphilis and gonorrhoea which spread among sections of the civilian population and required the setting up of special clinics. The Germans were as anxious as the civilian authorities to prevent its spreading. The more serious diseases were brought in by the slave workers under the Todt Organisation.

In 1944 Jersey suffered an epidemic of diphtheria with 277 cases of which 93 were adults; an unusually high proportion.

Typhus occurred in both Islands, but the civilian population remained relatively unscathed. About 380 people in Jersey were recommended for the extra rations allowed for tuberculosis sufferers, though only 41 were recorded to be receiving hospital treatment at the time of the arrival of the Home Office medical team in 1945. They concluded that the incidence of disease was grossly exaggerated as a means of securing concessions from the enemy.

The longer term effects of the Occupation on the health and nutrition of the Islanders are harder to gauge, yet it is apparent that they took but a short time to return to a normal state of health. Both the Jersey Medical Officer and the team from the Home Office carried out various tests and surveys, mainly on children, in a bid to assess the situation. The overwhelming conclusion was that there was little wrong with the health and efficiency of the adult population, both manual and sedentary being examined. The children, however, in both Jersey and Guernsey appeared to be of smaller stature than English children of the same age and particularly so in schools of low economic grade, mainly in the urban area. Figures showed a diminution in the rate of growth, probably diet related. Children from farming families were generally healthier. Neither medical team was over concerned with the situation and overall the children's teeth were in excellent condition. The Occupation was at an end and spirits were high. It was concluded that a positive attitude would easily overcome any small deficiencies that may have existed.

Obituary

Professor Dr. D Guillermo Folch Jou whose death was reported recently, had been President of the Spanish Hisory of Pharmacy Society for some years, as had his father previously. Folch Jou held the post of Professor of Pharmacy in the Faculty at Madrid University where he revitalised the interest in pharmaceutical history, in addition to building up the important Museum associated with the Society and with the University. He was widely known, attending most international conferences. His ebullience and his cheerfulness enlivened any gathering. His scholarly contributions to pharmacy were outstanding and his loss will be keenly felt throughout the world of pharmacy. He had not long retired from his professorial post.

L.G.M.

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PHARMACEUTICAL HISTORIAN

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History of Pharmacy Session
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Sponsorships.
The funding of the Society's activities has dominated many recent meetings of the Committee. It was felt that whilst the balance in hand appeared to be ample for limited activity, the publiation of the *Pharmaceutical Historian* was eroding that balance and it was essential to look for aid to ensure a really viable Society. The Committee is therefore extremely grateful and delighted that Merrell Dow Pharmaceuticals Ltd. has agreed to meet the printing costs of this and and the remaining issues of the Historian during 1987. To this generous response the company has also indicated without any commitment, that it will probably be prepared to provide a degree of sponsorship during 1988, although at this stage it cannot state the level of contribution that might be available.

When the pharmaceutical industry is generally in a "very tight situation", the action of Merrell Dow Pharmaceuticals Ltd. and its Managing Director, Mr. T.R. Irwin, FPS, who has often helped the Society in the past, will be recognised and appreciated by every BSHP member.

The Society is also indebted to the Squibb organisation for the continued support of the Foundation Lecture which has become a unique feature of the BSHP calendar.

Spring Conference 1987.
Often throughout the three days of the Conference in the Isle of Wight members were heard congratulating the President for the excellent arrangements, the marvellous weather, the comfortable hotel with its enthusiastic staff and above all a programme of such diverse variety and interest. The

The President (Mr. J.E. Steane) and the Town Crier who summoned members to the reception, with Mrs Steane and the Worshipful the Mayor of the Borough of South Wight, Councillor Miss Heather Humby who welcomed members to the Island.

congratulations were appropriately given, for the president (and his wife) had undertaken the organisation of the conference. An aspect that was most rewarding was the way in which local members of the PSGB branch supported the weekend conference together with the Mayor. Our thanks are due to all who participated and to Messrs. Graham Tatford, pharmaceutical wholesalers, who sponsored the conference outing to Carisbrook Castle.

Subscriptions.
A feature of the annual report for 1986 was that the total membership was at a healthy level. An influx of new members compensating for a number removed from the register for non-payment of subscriptions.

When presenting the balance sheet and financial report the Treasurer warned that a major financial problem had arisen following a sponsor's withdrawal of support for the

Pharmaceutical Historian. In spite of using a more economical printer the publication and postage costs exceeded the current membership fee. 1988 was likely to bring further increased costs. The committee at the May meeting considered the financial implications and the motion, approved at the AGM, that the UK membership fee for 1988 should be £10.

The committee recognised that the *Pharmaceutical Historian* was the important link between the membership and the Society, and considered that the publication standards should be maintained. Members had requested more provincial meetings should be arranged and also that consideration should be given to visiting and arranging joint meetings with other European Societies... activities that were likely to involve additional expenditure.

It had also been suggested that the Society should be more active in seeking new members by approaches to schools of pharmacy, PSGB branches, and by individual BSHP members actively pursuing opportunities for publicity.

Another item of expenditure will arise from the unique international collaboration of BSHP and its American counterpart (AIHP) following an agreement for the joint publication of the annotated letters from Dr. Jonathon Pereira to Mr. Jacob Bell in the years 1844 to 1853. The format will be a paperback booklet, permanently bound, illustrated and indexed.

The proposed subscription fee (for which many members are likely to claim a tax allowance) and the generous action of Merrel Dow should enable the Society to proceed on a satisfactory financial basis.

Officers

At the May committee meeting the following officers were elected: *President* Mr J.E. Steane, *Vice President* Mr T.D. Turner, *Treasurer* Mr G. Gunthorpe, *Secretaries* Dr W.E. Court and Mr A. Wright.

At the Annual General Meeting, April 12 four names had been received to fill four vacancies on the committee, they were: Dr J.G.L. Burnby, Dr W.E. Court, Dr M.P. Earles and Mr T.D. Turner, all were re-elected.

Due to Illness Mr A.H. Briggs was unable to continue to act as an auditor in which capacity he had acted for many years. Members expressed their appreciation for the way he had conscientiously carried out that important office and regretted his enforced retirement. Mr D.C. Harrod was re-elected auditor together with Mrs Enid Lucas-Smith who had "stepped in" when Mr Briggs was taken ill.

The Pharmaceutical Historian Logo.

Since 1967 the BSHP has used the apothecary logo in the heading of the *Pharmaceutical Historian* and lately on its headed paper and stationery. The Committee has had its attention drawn to the fact that another group has recently begun to use the same logo, BSHP publications are widely circulated, at home and abroad and the logo has become indissolubly associated with the Society. If the group continue to use the logo confusion will inevitably result and recipients of correspondence from that group will conclude that the Group is part of the BSHP or is in some way associated with it. Officers of the BSHP are attempting to resolve this unfortunate situation by negotiation.

OBITUARY

Thomas Douglas Whittet, CBE, D.Sc.(Hon.) Ph.D., B.Sc., FPS, FRSC, C.Chem., DBA, a founder member of the BSHP and a past president died on April 15th at the Middlesex Hospital. Dr. Whittet was chief pharmacist at University College Hospital from 1947-1965. In 1965 he became deputy chief pharmacist, Ministry of Health, and assumed the post of chief pharmacist in 1967, retiring in 1978.

In August 1982 he was elected Master of the Worshipful Society of Apothecaries of London, the first pharmaceutical Master since the Apothecaries Act of 1815 transformed the Society from a pharmaceutical to a medical one. He was also past president of the history of medicine section of the Royal Society of Medicine. Dr. Whittet was awarded the Pharmaceutical Society's Charter Gold Medal in 1978, and gained many honours from universities and societies in this country and abroad.

John Steane, president BSHP, writes: The death of Douglas Whittet saddened all members of the Society; his passing has left a gap that will not be easily filled. Members of the committee will miss his wide experience and knowledge of pharmaceutical and medical history. One of the founder members of BSHP and a past president, his contribution over the years has been immense. Undoubtedly his influence and erudition has had – and will continue to have a great influence on the development of the Society.

Douglas will be remembered for his readiness to help students in this country and abroad, and BSHP members will recall his "approachableness" and the many occasions when he readily gave of his time and experience. I personally have benefitted from his help and advice – often provided to a far greater degree than I could ever hope for or anticipate. Our common interest in numismatics provided a special link and I came to appreciate his phenomenal research activities. A few months ago (Oct. 1986) he gave the Thomas Vicary Lecture to the Royal College of Surgeons and the Barbers' Company – the first pharmacist to do so since the lecture was inaugerated in 1919. The subject was "Barber Surgeons' tokens and their issuers". His was a generous spirit, his influence and scholarship were profound. We were privileged to know him. To his wife, Doreen, and family go our deepest sympathy.

James Coleman, Secretary, Irish Society for the History of Pharmacy writes: At our May meeting I heard, with shock, that Douglas Whittet had died. I could hardly believe that this cultured and capable man was no longer with us, and I shared with other members a sense of loss. The Chairman paid tribute to Douglas Whittet's service to pharmacy and to the history of pharmacy. I was directed to convey to the officers of the British Society for the History of Pharmacy the deep sympathy of the I.S.H.P. on the death of their distinguished colleague who had accomplished so much in his lifetime and had at all times enhanced the image of pharmacy, at home and abroad.

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The Foundation Lecture 1987

The Green Pharmacists

By William E. Court

From earliest times plants have been inextricably bound up in the development of rational medical treatments because natural products were the earliest renewable sources of healing agents. Unfortunately plants also played a role in sorcery, witchcraft and dubious tribal customs.

Inquisitive tribesmen acquired skills in medical treatment by trial and error with little understanding of the underlying causes of diseased or healthy states.

The urgent need for plants as foods and medicines led to the evolution of cultivated clearings in forests and later to arable fields and gardens.

The garden directors, whether witch doctors, monks, physicians, scientists or lay practitioners, built up by practical experience a compendium of knowledge which, in often exaggerated form, was collated in the early reference books, the herbals. These early texts varied greatly in range, quality and accuracy.

The writings of Galen (131-200 A.D.) embodying many of the ideas of the earlier Greeks Hippocrates (*ca*460-377 B.C.), Theophrastus (370-256 B.C.) and Dioscorides (50-100 A.D.) dominated medical thought in the period up to 1750 A.D. and Galenic influences were reflected in the early herbals.

The belief in the Doctrine of Signatures, repostulated by Paracelsus *ca* 1500 A.D., added to the confused knowledge of plants that could heal, but confusion led to order because medical botany came to the fore after the successful exploitation of the printing press in the late 15th century, laying the foundations of pharmacognosy and phytochemistry.

Real books, well presented and well printed, encouraged wider and more critical knowledge and ensured communication between scholars.

The mid-16th century witnessed the spread of herbal or botanical gardens often centres of study and research where the skills and methods required for the production of food as well as drug plants were developed.

Thomas Sydenham in his 'Observationes Medicae' (1676) considered the materia medica of his day as a large collection of remedies of little value to the sick.

But how could order be obtained from chaos? Four obvious ways forward were possible:-

i) a botanical programme of description and classification of plants,
ii) a chemical route requiring careful searches for active principles – the quintessences postulated by Paracelsus,
iii) a programme of experiments to demonstrate the effects of drugs and poisons on living animals and subsequently man,
iv) a sound educational scheme.

At a time when pharmacy, medicine and folklore were not clearly differentiated, the green pharmacists were not obvious, yet it was then that the foundations of the botanical approach to the study of plant drugs was laid.

Inevitably herbals, good and bad reached Britain and were published, and some scholars here were already trying to organise and rationalise the available knowledge and to investigate the native British flora.

A number of British medical botanists, our earliest green pharmacists, travelled on the Continent and met leading European scholars including Gesner and Fuchs. One such traveller was William Turner (1515-1568) who, after a somewhat chequered ecclesiastical career during the Reformation, published *'A New Herball'* between 1551 and 1568. In an alphabetical presentation Turner described over 200 British plants and used many of Fuch's illustrations.

The Montpellier trained medical-botanist Mathias de l'Obel (1559-1616) came to Britain for the second time in 1584 and remained here. He is credited with the earliest scientific records of some 80 British plants and in his *'Adversarii'* he abandoned the current alphabetical system for a morphological system.

An important herbal was published by the London surgeon John Gerard (1545-1612). Born in Nantwich, Cheshire, Gerard studied medicine, probably travelled as a ship's surgeon and finally settled in London, acting as superintendent of gardens in the Strand and at Theobalds in Hertfordshire and rising in his profession to become Master of the Barber Surgeons' Company in 1608. His book *'The Herball or General Historie of Plantes'* was published in 1597. It was based on *'Pemptades'* a herbal written in Latin by Rembert Dodoens (1517-1586), a physician from Malines, Belgium. *'Pemptades'* had been translated into English by a physician named Priest who unfortunately died before his task was completed. Gerard managed to acquire the incomplete translation and rearranged it according to l'Obel's morphological system and contributed his own experience and observations together with 1800 illustrations, many of which were by Tabernaemontanus. Sadly Gerard applied many illustrations in wrong places, thus confusing his readers. L'Obel made some amendments but the major revisions were undertaken by the Yorkshire-born apothecary Thomas Johnson (*ca* 1604-1644). He enlarged and amended Gerard's work to produce a superior new edition in 1633. Johnson remarked that Gerard was a good man who tried to accomplish a task for which he was not adequately equipped. Despite that, Gerard's *Herball* is still in the bookshops.

John Parkinson (1567-1629), the London apothecary, botanist and gardener, who was director of the royal gardens at Hampton Court, was well equipped to produce his herbals *Paradisi in Sole Paradisus Terrestris* (1629) and *Theatrum Botanicum* (1640). The herbals of John Ray (1628-1705), *Historia plantarum,* a clergyman-botanist, published in London in 3 volumes between 1686 and 1704 also greatly influenced the activities of the apothecaries.

One of the less reputable herbals was that of Nicholas Culpeper (1616-1654), the almost apothecary and physician, who, in his publication *'The English Physician Enlarged'* (1653) reverted to astrological explanations of disease states. Significantly this inferior work can still be obtained in today's bookshops although some editions do present a warning explanation.

The occurrence of adulteration of drugs had been a problem from the 14th century onwards and dishonest apothecaries and druggists were not unknown. The need for accurately described drugs was imperative and was further stimulated by the botanical work of the great Swedish physician – botanist Carl von Linné or Carolus Linnaeus

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(1707-1778) who, in his epic *Species Plantarum* (1753) introduced the binomial system of plant nomenclature with which most of us are familiar and a system of classification based on floral structures.

In the late 18th and early 19th centuries three books were important. *'Histoire Générale des Drogues'* by the Parisian spicer-druggist Pierre Pomet was originally published with 400 engravings in 1694 and later republished by the author's apothecary son in 1735. *'Histoire Abrégée des Drogues Simples'* appeared in Paris in 1820. It comprised the pharmacognostical observations of Professor Nicholas Jean-Baptiste Guibort (1790-1867) and was followed by his *'Histoire Naturelle des Drogues Simple'* in 1840. These books greatly influenced the development of pharmacognosy in France and in neighbouring countries.

In Britain at this time pharmacy was at last emerging as an individual profession and the need for unadulterated drugs was pressing. Books printed in English were required and key volumes were produced by men closely associated with the emerging Pharmaceutical Society of Great Britain.

Jonathan Pereira (1804-1853), apothecary, surgeon, physician and gifted teacher of materia medica, published in two volumes in 1839-1840 his *'Elements of Materia Medica and Therapeutics'*, embracing pharmacognosy and pharmacology. Although the physicians ruled that therapeutics should not be taught to pharmaceutical students, materia medica to Pereira meant all aspects of crude drugs and one can only pause to wonder what effect Pereira would have had on pharmaceutical practice and education if his life had not ended prematurely as the result of an accident in 1853 when only 49 years old.

A contemporary and friend of Jonathan Pereira was Daniel Hanbury (1825-1875), pharmacist son of the Quaker Daniel Bell Hanbury who had been prominent in the formation of the Pharmaceutical Society. Although engaged in business at the Plough Court Pharmacy in the City of London, Hanbury devoted much energy to the scientific study of materia medica, travelling extensively and publishing, as a result of his accumulated experiences, many contributions on plant drugs of the day. Daniel Hanbury had a reputation for careful and precise descriptions of plant drugs and, a year after Hanbury's death at the age of 50 years, his collected works were published in London as *'Science Papers'* by his friend Joseph Ince. Hanbury's most important work was a joint venture with Professor Friedrich A. Fluckiger, professor of materia medica in Berne and later in Strasbourg. Under the title *'Pharmacographia – A History of Drugs'* (London 1874) Flückiger and Hanbury presented a valuable sourcebook of reliable information on 19th century botanical drugs. For each drug section headings indicated botanical origin, history, macroscopical description, essential microscopical structure, chemical composition, uses and adulteration. Copious footnotes stated sources of information. The book was, surprisingly, not illustrated. Nevertheless they realised that microscopy was important and had acquired a new significance when, in 1847, Schleiden had employed the technique to solve a problem of sarsparilla differentiation. As Flückiger himself had already published an illustrated textbook *'Grundlagen der pharmaceutischen Waarenkunde, Einleitung in das Studium der Pharmacognosie'* (Berlin, 1873) and Berg's *'Anatomischer Atlas zur pharmaceutischen Waarenkunde'* (Berlin, 1865) and Planchon's *'Traité Pratique de la Détérmination des Drogues Simples d'Origine Végétale'* (Paris, 1874) were available, Flückiger and Hanbury decided that reference should be made to such volumes despite the foreign language knowledge required.

About the same time, another distinguished pharmaceutical-medical botanist, Robert Bentley (1821-1893), who had qualified in pharmacy and medicine and was Professor of Materia Medica for the Pharmaceutical Society from 1853-1887, introduced an authoritative *'Manual of Botany'* (5 editions, 1866-1887), a *'Textbook of Organic Materia Medica'* (1887) and, more important, a 4 volume work *'Medicinal Plants'* produced in association with Henry Trimen and carefully illustrated by D. Blair. In his time Bentley was the authority on medicinal plants, a good researcher and a much respected teacher.

Another personality of great significance in this story of the accurate description of plant drugs was Edward Morell Holmes (1843-1930), pharmacist and botanist. His life work comprised the expansion and exploitation of a museum formed from Pereira's materia medica collection and collections obtained from the International Exhibitions of 1850-1851 and 1860. Despite considerable internal opposition and professional under-recognition, Holmes acquired authentic drug specimens from all parts of the world increasing the collection from about 2,000 to about 20,000 specimens. Together with herbarium specimens this accumulation formed the Pharmaceutical Society Collection of Crude Drugs and Herbaria and Holmes was its curator for 50 years (1872-1922). He published many articles, in particular over 300 in the *Pharmaceutical Journal* as Pharmacognostic Notes, and contributed greatly to the accurate authentication of drugs by comparison with genuine reference samples. He was also an authority on the taxonomy and morphology of marine algae, mosses and lichens.

A pupil of Robert Bentley and the son of a former President of the Pharmaceutical Society, Henry George Greenish (1855-1933) was appointed lecturer in materia medica to the Pharmaceutical Society in 1890 and professor in 1893 at the age of 38 years. Greenish had expanded his knowledge and expertise by further studies in the universities of Dorpat (Estonia) and Vienna and he understood the aims and practice of European continental pharmacognosy which embodied the histology, chemistry and pharmacological actions of biological drugs. Concentrating on a pattern of macroscopical and detailed microscopical descriptions of commercial varieties of drugs, sensory characters and chemical identity tests, Greenish set the standard for future pharmacopoeias.

Although Greenish also devoted much energy to pharmaceutics and to the development and administration, latterly as Dean, of the School of Pharmacy in London, he was essentially a green pharmacist. He added a further dimension to the scientific description of drugs in his series of articles with Eugene Collin on *'Vegetable Powders and their Diagnostic Characters' (Pharm. J* 1901-1904). In expanded form these articles were published in 1904 as the still valuable reference book *'Anatomical Atlas of Vegetable powders'* and, at last, a good, illustrated reference text of microscopical characters was available. Another important publication by Greenish was *'Elements of Materia Medica'* (1899), an illustrated, but not profusely so, textbook based on a morphological classification of the drugs. The 6th edition of this popular textbook, issued in

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1933, bore the changed title *'A Textbook of Pharmacognosy'*. Greenish also produced the textbook *'Examination of Food and Drugs'*, emphasising again the importance of analytical microscopy.

Contemporary with Holmes and Greenish and a student of the School of Pharmacy of the Pharmaceutical Society of Great Britain was Pierre Elie Félix Perrédès (1874-1950), a native of Jersey, who was an outstanding worker on vegetable drug anatomy. In the period 1900-1910, prior to his devoting his energies to retail pharmacy in Lowestoft, Perrédès produced meticulously accurate, detailed, critical and carefully illustrated accounts of drugs such as strophanthus (1900), grindelia (1906-1910), *Robinia pseud-acacia* bark (1901), *Salix* and *Populus* (1903) and *Derris uliginosa* stem (1902). Most of his research was undertaken in the Wellcome chemical research laboratories.

The microscopical descriptions, which had been developed with great care, were usually qualitative and characterised the finer structures of medicinal plant material. This was to change.

Holmes had been curator of the Pharmaceutical Society's museum for 50 years (1872-1922), Greenish had carried on the responsibility from 1922-1927, and then a new curator was appointed. Thomas Edward Wallis (1876-1973) was an experienced college lecturer and analyst but a late starter in pharmacognostical academic life when, in 1919, he was appointed lecturer in botany at the age of 43 years. Wallis' standing was quickly established by his discovery and exploitation of the lycopodium spore count method of quantitative microscopy in the early 1920's. Wallis set a very high standard which has been reflected in the anatomical research publications of many more recent pharmacognosists and their students e.g. Fairbairn, Rowson, Jackson, Evans, Fell, etc. Wallis advocated the use of precise micromeasurements as indicated by Moll and Janssonius in their book *'Botanical Pen Portraits'* and, not surprisingly, his research publications and textbooks of pharmacognosy and analytical microscopy were outstanding. Wallis' books are still useful reference volumes.

Sadly for Wallis, Greenish had reluctantly removed the chemical study of the drugs from the pharmacognosy syllabuses in 1924 in order to establish pharmaceutical chemistry in the new London University degree scheme. Therefore Wallis, despite his willingness and capability, was prevented from fully exploiting the chemical potential of his discipline.

The drug standards had risen so much because of Wallis' standards that aldulteration was almost non-existent; but pharmacognosy was facing a new threat. The synthetic, allopathic medicines had slowly appeared on the medical scene in the early 1900's and from 1935 onwards the pace accelerated rapidly. There was one last episode in the quest for accurate descriptions when Betty P. Jackson and Derek W. Snowdon published *'An Atlas of Vegetable Drugs'* in 1968. This carefully prepared, well illustrated compilation was not only useful, it was also written in English.

But was there any other approach to green pharmacy? Certainly because as pharmacy emerged, chemistry also grew and soon dominated the scientific scene and a second strand of green pharmacy emerged.

The discovery of fire had enabled man to boil water and the ensuing techniques of infusion, decoction and distillation were well established by the Grrek era (600-100 B.C.). By Avicenna's time (986-1037) distillation had assumed great importance in Arab alchemy and medicine. Drug extraction was unwittingly already established.

Paracelsus (Philippus Theophrastus Aureolus Bombast von Hohenheim, 1493-1541) introduced the era of iatro – or medico – chemistry. He believed and advocated that alchemy should be directed towards the healing of diseases and should be the handmaiden of medicine. Above all, he stressed the need to seek and find the 'quintessentia' – the active principles – but in his time chemistry was but a struggling infant.

The art of extraction using aqueous and alcoholic solvents was slowly developed and exploited and especially so by the pharmaceutical practitioners. By the time of King Charles II (late 16th century) alcoholic tincture of cinchona was employed by the apothecary Robert Talbor and Nicholas Lémery (1635-1715), court apothecary to Louis XIV of France and Charles II of England and Scotland, was emphasising, quite wrongly, the importance of organic acids. His ideas stimulated the Swedish pharmacist Carl Wilhelm Scheele (1742-1786) to discover citric and malic acids in the fruit juices of unripe gooseberries, sour apples and cranberries. Scheele's discovery of plant acids such as tartaric, lactic, oxalic, citric, malic, gallic, etc., has prompted the suggestion that he was not only a green pharmacist but also the first plant chemist as he isolated the compounds as individual chemical entities. Like the later German pharmacists A.F.A. Wiegmann and L. Polstorff *(ca* 1840), Scheele had disproved the old vitalistic theory that assumed that active constituents could only be produced by living cells and therefore could not be extracted from dead plant material. Scheele was a great chemist, a giant in science because of his many discoveries e.g. chlorine, arsenic acid, hydrogen sulphide, silicon fluoride, etc., yet he remained proud to be an apothecary who extended science in his apothecary shop. Unfortunately he suffered poor health and he died aged only 44 years.

By the early 18th century ideas in medicine were changing and especially so in France where the sceptic clinician Francois Magendie (1783-1855) had turned his attention to scientific investigation and, in so doing, had laid the foundations of experimental physiology, pathology and pharmacology. Magendie supported the use of chemically pure drugs in medicine and with his colleagues was able to exploit the excellent work in the chemical field by, in particular, the French pharmacists.

Prominent was Pierre Jean Robiquet (1780-1840), apothecary and professor of pharmacy in the Paris École Supérieure de Pharmacie, who not only encouraged the father and son team of Paris apothecaries, Pierre Francois Guillaume Boullay (1777-1858) and Polydore Boullay (1806-1835) to develop satisfactory methods of percolation but also isolated many phytochemicals including asparagine (1805), glycyrrhizin from liquorice (1809), caffeine (1826), alizarin and purpurin from madder (1827) and codeine (1832).

The greatest contribution of the French pharmacists was in the field of alkaloid chemistry. Prominent researchers were the green pharmacists Pierre Joseph Pelletier (1788-1842) and Jean Bienaimé Caventou (1795-1877), both of whom were Paris apothecaries and professors in the École de Pharmacie. From opium came narcotine = noscapine (Derosne, 1804), morphine (Sertürner, 1816), codeine

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(Robiquet, 1832), narceine (Pelletier, 1832), thebaine (Thibouméery, one of Pelletier's students, 1835) and papaverine (Merck, 1848); from nux vomica Pelletier and Caventou isolated strychnine (1818) and brucine (1819) and from cinchona they isolated quinine and cinchonine (1820). Quinicine (1871) was discovered by John Elliott Howard, a distinguished quininologist and son of Luke Howard (1772-1864), a founder of the Pharmaceutical Society of Great Britain. Rene Desfosses (1821), a pharmacist from Besancon, isolated solanine from Woody Nightshade *(Solanum nigrum L.)* berries. Rudolph Brandes (1795-1842), pharmacist, founder of the North German Apotheker Verein (Pharmaceutical Society) and sometime editor of *Archiv der Pharmacie*, discovered hyoscyamine, daturine and impure atropine (1819-1820). Another German pharmacist, Philipp Lorenz Geiger (1785-1836) and his chemist colleague L. Hesse obtained pure atropine and hyoscyamine (1833). From ipecacuanha Magendie and Pelletier isolated an alkaloid that had some emetic action, so they called it emetine. Coffee, too, was investigated by pharmacists who recovered the purine bases. Caffeine was found independently in 1821 by Friedlieb Ferdinand Runge (1795-1867), a Hamburg pharmacist who became professor of chemistry in Breslau, by Pelletier and Caventou and by Robiquet. Theobromine was obtained in 1840 from cocoa by the Russian chemist Alexander Woskressensky (1809-1880).

Alkaloids, although challenging to the chemists of the day, were easier to isolate than the sugar-linked glycosides which are often non-nitrogenous and relatively unstable. Although Robiquet and Boutron-Charland had separated amygdalin in 1830, it was the work of the chemists Justus Liebig (1803-1873) and Frederich Wöhler (1800-1882) that really characterised the compound. Liebig did his early experimental work in an apothecary's shop and Wöhler was the son of a veterinary surgeon, and a medical doctor turned chemist.

William Withering (1741-1799) had demonstrated the clinical value of *Digitalis purpurea* L. leaves but the purple foxglove presented a great problem to pharmacists and chemists from the time when Le Royer in his pharmaceutical laboratory in Geneva (1824) produced an impure vegetable alkali. Many attempts to purify the material were made by pharmacists and chemists and the French pharmacist Claude-Adolphe Nativelle (1812-1889) successfully isolated in 1868 pure crystalline digitaline, which is now called digitoxin. Digoxin, the most widely used glycoside, is obtained from the wooly foxglove, *D. lanata* Ehrr., and was not discovered until 1930 when Sydney Smith of Burroughs Wellcome Laboratories isolated it.

Other types of compound were also isolated from plants by green pharmacists. For example, Heinrich Hermann Christian Hlasiwetz (1825-1875), botanist and apothecary in Brunn and subsequently a professor in Innsbruck and Vienna, worked on natural products and, despite his propensity for explosive accidents (he was fond of potassium fusions) he discovered resorcinol, phloroglucinol and protocatechuic acid as well as the formula for berberine.

Paradoxically some of the researchers who instigated natural product investigation also helped to develop changing attitudes. Synthesis was thus a potential alternative to the use of natural compounds and an eventual threat to pharmacognosy.

The demand for reliable drugs stimulated improved methods of quality control. Pharmacopoeial standards for drugs of natural origin were devised and improved by specialist committees including names such as Greenish, Holmes and Wallis.

The generation of new ideas and new techniques depended much on sound education. The early green pharmacists were botanists and chemists because it was usually part of their training and discipline boundaries were not rigidly enforced. As science advanced, specialisation reared its ugly head. Materia medica had embraced botany, chemistry, physiology and pharmacology in the early 19th century and education relied mainly on practical experience rather than college courses. Ironically it was Greenish who was forced to divide materia medica into pharmacognosy and pharmaceutical chemistry when the London University degree in pharmacy was introduced. yet today one can find pharmacy courses with no overt mention of pharmacognosy. Certainly in the past in the fields of identification and authentication, chemical investigation, standardisation and phytochemical and philosophical explanation, the green pharmacists have served us well. Yet the tide has turned against them. The rise of the alopathic system has made the direct use of the plants less obvious, but there is still much work to be done. Many plants have never been investigated, many herbal products are characterised in ignorance and quality control remains an essential if the public are to be protected. To many people plants and plantlore are sources of fascination but to many, pharmacognosy is a desert in an oasis. With the tremendous potential still hidden in nature the green pharmacists must surely strive onwards to the verdant oasis in the desert.

British Pharmaceutical Conference.

Two Exhibitions of interest to pharmacy historians.

Many pharmaceutical artefacts from the collection owned by Mr. W.A. (Bill) Jackson, a community pharmacist in Manchester and member of BSHP will be on display in the exhibition area of the John Rylands University Library of Manchester, Main Building, Burlington Street from September 12 to October 31. Bill Jackson will be in attendance at the exhibition for the period of the Pharmaceutical Conference to talk to visitors about his collection. The exhibition will be open from 9.30 am until 5.00 pm.

At the Deansgate Building of the John Rylands University Library of Manchester there will be an exhibition of herbals, pharmacopoeias, formularies, materia medica. Some of the fine and rare early pharmaceutical, botanical and medical literature owned by the Library. This exhibition will be open weekdays (10 am-5pm) from September 12th to December 31st, and on Saturdays (10 am-1 pm). Included in the exhibits will be Culpeper's 'A Physicall Directory', 'The Greate Herball' (1561), 'A Boke on the Properties of Herbes' (1550), 'De Medicanali Materia Libri Sex' (1535) by Dioscorides and 'Herbarum Imagines Vivae' (1535) published by Christian Egenolph.

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Irish Pharmacy's Struggle For Identity* Part One

By James G. Coleman

In most primitive societies the medicine men were priests, and Ireland was no exception. The Druids combined the functions of priests, medicine men and astrologers and ranked high in the social structure. Their skills and lore were handed down by word of mouth from earliest times consequently most of this knowledge was lost when the Irish way of life was destroyed in the 16th and 17th centuries. In the Annals of the Four Masters it is recorded that about 940 B.C. nine thousand of Parthalon's people died in one week on Taimhleacht Muintire Parthaloin. This place has been identified with Tallaght in Co. Dublin. In 487 B.C. the Rule of the Firbolgs was ended at the battle of Moytura by Tuatha de Danaan who came from the East and brought a new culture. The leader of the victors, King Nuada, had his hand cut off in the fighting and his physician, Diancecht, fitted an artificial hand made of silver by Credne Cerd. Diancecht is the only one of the ancient physicians of whom we have a full record; and even to the present day in parts of Ireland a preparation known as Diancecht's Porridge is used as a cure for colds and sore throats. It is made up of hazel buds, dandelions, wood-sorrel and chickweed boiled with oatmeal and taken morning and evening. The ancient Irish also used the equivalent of what we know today as a Turkish bath or sauna. Some of these "sweating houses' are still in existence: they are stone houses about a metre in height with a very narrow entrance and with a floor area of approximately 2m x 1½m. When required for use a large fire was lit inside, and when the house became hot as an oven the embers were raked out and the patient, wrapped in a blanket, then entered. He remained inside, sweating it out as long as he could, and plunged into a pool of cold water when he emerged. He was then rubbed vigorously until he glowed all over. This sweating treatment was practised in parts of Ireland until the present century and is common in Finland. There are many references also to medicated baths in Irish tales.

For centuries the early settlers exercised jurisdiction over the Pale, a limited area of the country, an area that consisted mainly of a broad strip along the eastern coast but at one time included a portion of Munster. These settlers kept written records and superimposed their own culture on all residents within their sphere of control; and so it is the history of medicine in the Pale rather than the history of medicine in the island of Ireland. The destruction of monastic settlements, first by the early marauding Norsemen and subsequently by English armies, destroyed records which would now be invaluable; and when the Irish initiated a campaign of burning the homes of landed gentry during the "troubled times", libraries were lost together with old writings, beautiful houses, furniture and works of art.

The first organised medical body in Dublin was the Guild of St. Mary Magdalen founded by Royal Charter in 1446. A later charter was granted by Queen Elizabeth I to the Guild of Barber Surgeons in 1577; and a third charter dated 10 February, 1687, was granted to the Barbers, Chirurgeons, Apothecaries and Periwig Makers by James II "so that their Arts and Misteryes may be the better exercised". The interesting feature of the third chapter (apart from the inclusion of the Periwig-makers) is the association of Barber Surgeons and Apothecaries because for centuries surgeons, physicians and apothecaries were considered to be followers of different trades. But the surgeons were disgruntled by their association with barbers, and a large number of surgical practitioners in Dublin not attached to the guild shows that the guild had no effective control and also shows that any quack could hold himself out as a surgeon. Prior to 1446 surgery had been carried on by clerics until prohibited by the Church. Assistants and porters who had helped the clerical surgeons seized the opportunity to fill the gap thus created, leading to the proliferation of the uneducated quacks.

The first Dublin apothecary recorded was Thomas Smith, an Englishman who had settled in Dublin. In 1566 he was granted a "concordatum" of twenty shillings and one day's pay from every soldier in garrison, to encourage him to remain in Dublin supplying "fresshe and newe druggs and other apothecarye wares in plentifull manner to the needefull and good helpe to such of English byrthe in this realm resident". At that time the provision of medicines in the Pale was a function shared by medical practitioners and quacks; the Irish outside the Pale continued to depend on families who were hereditary "healers". Smith must have cornered the market because he flourished and became Mayor of Dublin. During his term of office he had the honour of laying the foundation stone of Trinity College in 1593. However good Smith may have been, health services in Dublin must have been grossly unsatisfactory because Dermuid O'Meara (physician to the Butlers of Ormond) wrote to the Lord Deputy in 1619 criticising the "cursed mountebanks, ignorant barbers and shameless quack compounders".

It is interesting to note the use of the title "compounder" which continues to be used by Irish pharmacists.

O'Meara's criticism appears to have been justified. In 1667 Charles II granted a charter of incorporation to the Royal College of Physicians in Ireland, but the College found it lacked sufficient powers to control "the daily abuses of the .... art of physic in the Kingdom of Ireland by the practice of mountebanks and empirics, and other ignorant and illiterate persons.....".

A new charter was granted by William III in 1692 which included provision for the supervision of apothecaries, surgeons and midwives. But by this time the manufacture of medicine was ceasing to be a matter of private recipes made up for individual sufferers. The firm of Boileau and Boyd Ltd. began operations in 1700, having been founded by the Robert Wilson who in 1705 witnessed the signatures to the oath of the "Corporation of Barbers, Chirurgeons, Apothecaries and Periwig-makers".

In 1735 an Act was passed to control the preparation and sale of medicines. The College of Physicians was empowered to appoint four inspectors who could inspect

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** Abstract from a paper given at a joint meeting of BSHP and The Pharmaceutical Society on February 12. James Coleman is Secretary, Irish Society for the History of Pharmacy, former Registrar, The Pharmaceutical Society of Ireland.*

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apothecaries' shops and destroy any medicines of doubtful quality. All apothecaries, chemists and druggists were required to be registered at the College. In 1761 Lucas's Act was passed. It embodied provisions that proprietary remedies might be sold only with the sanction of the College of Physicians, and approval of the College would not be given until the composition was disclosed. Dr. Lucas (at one time a Member of Parliament) conducted an apothecary's shop in Charles Street.

Lucas's ambition was to qualify a large number of apothecaries and to secure them the monopoly of the sale of drugs so that they could make a living in the small towns throughout the country. Largely due to his energy and forceful organisation the plan succeeded.

The Guild or Corporation of Apothecaries had been set up by charter in 1745 and the establishment of an Apothecaries' Hall became an active issue towards the end of the 18th Century. Following agreement between the three bodies, the Apothecaries' Act of 1791 established the Hall. Membership of the Hall was open to all apothecaries in Dublin on payment of £100. For many years the Hall held a monopoly of the importation of drugs and their distribution in Ireland and members were paid dividends annually. The Apothecaries' Hall was built in Mary Street where the business of manufacturing and wholesale chemists was carried on for 250 years. As the century advanced, more and more apothecaries became medical men and many disdained to keep open shop. Furthermore, they left the smaller towns to practise in cities, and this reduction in medical halls encouraged the proliferation of chemists and druggists. This ultimately led to the introduction of the Pharmacy Act of 1875 and the Amendment Act of 1890.

The chemists and druggists in Ireland had formed the Chemist and Druggists' Association of Ireland. The growing tendency of the Apothecaries to concentrate on the medical side of their calling, to the detriment of their dispensing activities, had given greater scope to the chemists and druggists and greater impetus to their plans for official recognition. Their progress alarmed the Apothecaries who opened negotiations with the Chemists and Druggists Association. By 1873 agreement was reached on a draft Bill which would enable the chemists and druggists to become legalised sellers of poisons but not dispensers of prescriptions. But then the Apothecaries made vital changes in the measure without informing the Association and coolly sent the draft of the Bill to the Attorney General with the assurance that it was agreed to by the chemists and druggists. Of course the Apothecaries' duplicity came to light and the chemists and druggists were furious. The deceit did the Apothecaries' Hall immense damage.

The College of Physicians a short time afterwards announced its intention to introduce a short, simple Bill to extend the Pharmacy Act of Great Britain to Ireland. A select Committee was set up to examine the Physicians' proposal and recommended in preference the formation of a separate Pharmaceutical Society for Ireland, listing a number of reasons to justify the recommendation.

If one studies the Regulations submitted for the approval of the Privy Council during the first two years of the Council's existence, it becomes obvious that the only status sought for its licentiates was that of dispensers. It must be born in mind that conditions in Ireland were so dissimilar to those in Great Britain that the first Council rightly decided according to its powers that there was no valid reason for establishing two grades, with different titles but with the same responsibilities, functions and privileges. Where the Council slipped up was ignoring or considering itself helpless to deal with the extraordinary carelessness in the drafting of the Pharmacy Act. A class of persons who would be legally qualified to carry on the business of selling poisons, as distinct from persons entitled to dispense prescriptions, was clearly envisaged; but the Act made no provision for registering such persons. Not only did those engaged in the retailing of poisons in 1875 continue their business, but they were joined in the trade by large numbers of shopkeepers. In the absence of specific authority, the Pharmaceutical Society was powerless to exercise any control over them. In 1884 the Council was disposed to seek an amendment to the Act to remedy its defects but the proposal was dropped when it was strenuously opposed at the Annual Meeting.

(To be concluded)

Book Review

John Conyers, London's first archeologist,
By Juanita G.L. Burnby. Reprinted from *Transactions of the London and Middlesex Archeological Society,* 1984, *35*63-80, Available from Jenny Hall, Museum of London, London Wall, E.C.2. at 60p.

This paper which is partly based on Dr. Burnby's 1982 Monckton Copeman Lecture to the Faculty of the History and Philosophy of Medicine and Pharmacy of the Society of Apothecaries, gives an account of an ingenious 17th. century London apothecary who was an archeologist, a collector and an inventor. The author gives information about the contemporary background of archeological and related knowledge and shows how Conyer's work relates to it. She has also investigated his family tree and has corrected some earlier errors. A genealogical table of the family is included. The paper is illustrated by some excerpts from Conyer's manuscripts and some of his interesting drawings. The paper maintain's Dr. Burnby's usual high standard of work on original manuscripts and gives a valuable account of a pioneer of archeology about whom little was previously known.

T.D.W.

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Diary Dates

September 16
British Pharmaceutical Conference 1987 Manchester
History of Pharmacy Session
Dr. F.L. Rose: "Synthetic Antimalarials, from Dalton to Today"
Mr. W.A. Jackson: "Grana Angelica, Patrick Anderson and the True Scots Pills".
Venue: Muriel Stott Conference Centre, University Library, Manchester University.

November 12
Dr. Jonathan Liebenau: The History of the British Pharmaceutical Industry from Quinine to Penicillin.

Auctioneer's Discovery

An unusual story concerning the contents of a South Petherton shop due to be auctioned made National Press headlines on August 11. *The Daily Telegraph* reported "Edwardian shop hidden in 'time warp'. Originally a chemist's shop opened in 1880 by William White. When he died in 1909 the business passed to his son, Charles who was not qualified 'so he simply partitioned off the back part of the shop and carried on selling patent medicines and wine from the front'.

'Charles never changed the shop and when he died his daughters Margaret and Evelyn saw no reason to do so either. The two spinsters ran the business .... But the coming of decimal currency in 1971 proved too much for them .... so one day they just shut the shop'.

'After Margaret died aged 81, Evelyn, 80, went into an old peoples' home and her lawyers asked for the house and shop to be auctioned'. The auctioneer found, hidden from view for almost 80 years, had been the 'grandfather's apothecary store sealed up and left to gather cobwebs since he died in 1909' including the dispensing book 'in the apothecary's copperplate handwriting bearing the last entry he made on the day he died'.

The auction is to take place at Lawrence Fine Arts, South Street, Crewkerne TA18 8AB (Tel: 0460 73041) on September 14 at 6p.m.

Lot 3 is the shop, Lot 3A the shelves, counter and drug drawers, Lot 3B the remaining contents. The auctioneers reserve the right to combine Lots 3A and 3B.

Tokens

As the later parts of his "token" series in the *Pharmaceutical Journal* had to be much abbreviated Dr Whittet published fuller versions in local archeological or historical journals. Since these are unlikely to be seen by the majority of pharmacists a list of those published so far is appended.

DORSET	*Proceedings of the Dorset Natural History and Archeological Society,* 1985, *107,* 7-9.
DURHAM	*Durham County Local History Society Bulletin,* December 1985, No. 35, 13-20.
GLOUCESTERSHIRE	*Journal for 1985 of the Gloucestershire Society for Industrial Archeology,* 21-28.
HERTFORDSHIRE	*Hertfordshire's Past,* No. 20, Spring, 1986, 3-10.
HUNTINGDONSHIRE	*Journal of the Hunts Local History Society,* 1986, Vol. 2, No. 6, 11-13.
RUTLAND	*Journal of the Rutland Record Society,* No. 7, 1987, 249-251.

1848

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18th Century Drugs for the Royal Navy*

William E. Court

The Royal Navy in the 18th and early 19th centuries, like the present Royal Navy, comprised a greater proportion of young men who were usually fitter and healthier than the older men. Nevertheless the Royal Navy had problems. Its men were often conscripted and therefore prone to desert. They were often accommodated in ships with cramped quarters, limited exercise facilities, poor food, spartan sanitary arrangements and cruelly harsh discipline.

From the medical point of view the difficulties caused by long voyages in varying climates under less than ideal conditions were exacerbated by Jolly Jack's shore leave, which could introduce diseases from local unclean foods, local endemic diseases including tropical fevers and dysentery, and sexually transmitted diseases such as gonorrhoea, chancre and syphilis. In addition men who went to sea were still prone to to the common diseases affecting their families ashore in Britain. Maintenance and training work aboard ship on routine cruises could cause injuries to crew members and engagement with an enemy result in severely wounded seamen.

It was early realised that a fighting ship was only an effective combat unit when its crew members were fully fit and well trained. Not surprisingly therefore the ships of Sir Francis Drake's fleet facing the Spanish Armada in 1588 carried sea-surgeons and, in the 17th century the Barber-Surgeons Company of London was examining sea-surgeons.

During the reign of Charles I (1625-1649) hospital ships were recognised in the 'Navy Royal' and sea-surgeons were, despite their inadequate training, permitted to use medicines for physical rather than surgical conditions.

In the period of the Commonwealth the standing New Model Navy was developed, particularly under Admiral Robert Blake, arguably our third most famous sailor after Nelson and Drake. The Navy increased from 39 ships in 1649 to 229 ships in 1660. In the following reign of Charles II (1660-1685) the name 'Royal Navy' was officially adopted for the permanent fleet.

Medical services afloat were still rather poor and there were no specific naval medical facilities ashore. In 1696 Christopher Wren's Greenwich Hospital for aged, sick and disabled seamen took shape, its first physician being appointed in 1703, its first surgeon in 1704, and its first dispenser, Henry Blakely in 1713. Thus quite early on the Royal Navy had separated the three professions – medicine, surgery and pharmacy. Significantly, although Surgeon's Mates (who had been so examined by the Surgeons Company of London) might be required to take on the duties of the Dispenser and the Dispenser undertake the role of the Surgeon's Mate, the Dispenser was primarily a pharmacist.

Further naval hospitals were opened at Haslar, Gosport in 1753, Plymouth in 1762 and Chatham in 1905. Haslar was the largest and combined the duties of treating the sick and supplying medical stores to naval ships.

The importance of the Dispenser and his duties was stressed in reports produced by the Commissioners for the Care of Sick and Wounded Seamen in 1742, in revised form for Haslar Hospital in 1755, and in the original form again in 1794. Duties included stock control, extemporaneous dispensing and compounding, and oath taking concerning the efficient performance of professional duties. In 1757 the Commissioners instructed that the First Surgeon and the Dispenser of Haslar Hospital together with the Surgeon of the Hospital Ship *Thetis* should view the quality of the drugs for that ship. Despite such apparent importance, the Dispenser had to work under the supervision of the Physician or the Surgeon. The famous Dr. James Lind (1716-1794), the father of British naval medicine, imposed, during his service at Haslar Hospital (1758-1783), his own regulations for good pharmaceutical practice in matters of labelling, checking dispensed medicines, prescription records, etc., and probably produced the pharmacopoeia for the hospital. The position was confirmed in the Supplement to the Report on Haslar Hospital in 1794, viz. 'The subordinate part of the medical establishment is divided into three branches, namely, that employed in assisting the physicians, that employed in assisting the surgeons, and that employed in compounding medicines'.

The Royal Navy, at home and abroad, used dispensers who were 'bred Apothecary' or 'bred to pharmacy'. Dispensers under a Chief Dispenser worked at Haslar until 1831 when a Surgeon in Charge of Stores was appointed in place of the Chief Dispenser. Since 1872 the Dispensers have been pharmacists and since 1916 they have been titled as Pharmacists. Such pharmacists were, and are, civil servants and not serving naval personnel.

But what of the Royal Navy at the time of Horatio Nelson (1758-1805), and, particularly, the Navy afloat.

The practice of medicine in the 18th and early 19th centuries was still influenced by the Humoralistic-Galenic tradition which depended on the trinity of venesection (blood-letting), emetics and cathartics to cleanse the body functions e.g. lungs, blood, kidneys, gastrointestinal tract, etc., and thus permit natural recovery.

The range of drugs available and used had widened over the years to include not only the newer vegetable drugs, especially from the New World, but also the more toxic chemical emetics such as the antimonials, and toxic chemical cathartics such as calomel (mercurous chloride).

For naval ships a prescribed list of drugs was necessary. Supplies of drugs to ships of the Royal Navy during the period 1703-1805 were provided by the Apothecaries Hall, who held a monopoly right. The monopoly could not have been absolute because the Plymouth apothecary William Cookworthy (1705-1780) was supplying pharmaceutical goods to the value of £700 per annum to the Royal Navy in 1778.

Typical medical stores for ships of the Royal Navy were compiled by Sir Gilbert Blane F.R.S. (1749-1834) and reported by Turnbull in his book *Naval Surgeon* in 1806. Blane's recommended Navy List of Drugs comprised 65 items which can be classified into groups including laxatives, emetics, stimulants, demulcents, sedatives,

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*Abstract from paper presented at
The Spring Conference '87, Isle of Wight.

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analgesics, antispasmodics, diuretics, diaphoretics, tonics and antifever drugs. Many drugs can be allocated to more than one heading.

The List of Drugs

Senna Leaves, Aloes, Powder of Jalap, Purging Salts, Cathartic Extract, Manna, Salts of Hartshorn, Salt of Steel, Salt of Wormwood, Nitre, Ammoniacum, Myrrh, Balsam of Copaiba, Traumatic Balsam, Ginger, Capsicum, Whole Mustard Seed, Chamomile Flowers, Jamaica Pepper, Hops, Camphor, Spermaceti, Peruvian Bark, Quassia, Gentian, Ipecacuanha, Dried Squills, Extract of Hemlock, Extract of Logwood, Sarsaparilla, Serpentary, Castor Oil, Linseed Oil, Linseed, Cream of Tartar, Golden Sulphur of Antimony, Emetic Tartar, Calomel, Corrosive Sublimate, Crude Mercury, Flower of Sulphur, White Vitriol, Flowers of Zinc, Opium, Laudanum, Magnesia, Prepared Chalk, Oyster Shells, Wormwood, Cinnamon, Oil of Almonds, Essential Oil of Mint, Conserve of Roses, Cordial Confection, Rectified Spirit of Wine Vinegar, Weak Spirit of Vitriol, Spirit of Mindererus, Spirit of Turpentine, Gum Arabic, Gum Guaiacum, Castile Soap, Blistering Plaster, Cantharides, Castor.

Of the 65 items listed at least 12 can be regarded as laxatives varying considerably in effect. Therefore the merits of the individual drugs were important. Some were drastic and rather dangerous treatments. Jalap, the powdered resinous tubers of the Mexican Andean Convolvulaceous plant *Ipomoea purga* Hayne, was, according to Flückiger and Hanbury, a brisk cathartic used as a hydragogue with potassium tartrate or calomel for dropsy (oedema). A popular purgative of the time was Cathartic Extract, Compound Extract of Colocynth. It was prepared by macerating colocynth, the pulp of the Cucurbitaceous Cypriot bitter apple *Citrullus colocynthidis* Schrader, in weak alcohol for 4 days. The alcohol was removed by distillation and Extract of Aloes, scammony resin and curd soap added to yield a firm extract. Finally powdered cardamom seeds were added. Scammony resin was obtained from the roots of *Convolvulus scammonia* L., a large bindweed growing in Asia Minor; its resin resembled jalap resin and was also a drastic purgative. Cardamom seeds are obtained from the Indian and Sri Lankan Zingiberaceous plant, *Elettaria cardamomum* Maton var. *miniscula* Burkill; the seeds are removed from the capsules immediately before use to minimise loss of the carminative volatile oil. Cathartic Extract was very griping and, in the 19th century was frequently prescribed with Extract of Hyoscyamus as an antispasmodic as in, for example, Colocynth and Hyoscyamus Pills. Surprisingly, henbane is absent from Gilbert Blane's list.

Calomel was much praised as a powerful purgative, yet this mercurous chloride or mercury subchloride (HgCl) was dangerous if retained in the intestinal tract. Correct procedure was administration at night, followed by saline purgation next morning.

Milder and safer laxatives were the anthracene purgatives aloe and senna. Aloe was the dried liquid obtained from the leaves of various species of African and West Indian Liliaceous *Aloe* plants. Senna comprised the leaflets of some Leguminous *Cassia* species, especially Alexandrian (*C. acutifolia* Delile) and Tinnevelly or Indian (*C. angustifolia* Vahl). Surprisingly, the leaflets were used; today the pods are preferred because their effect is much less griping.

Another mild laxative was Castor Oil, the fixed oil obtained by expression from the seeds of *Ricinus communis* L., an ornamental Euphorbiaceous plant native to India but found growing in Southern Europe, particularly Italy, and in the West Indies. Although well known in Turner's time (*ca* 1568) and mentioned by Gerard (*ca* 1600), castor oil seems to have lost popularity until, in 1764, the physician Peter Canvane, who had practised in the West Indies, advocated the use of 'Oleum Palmae Christi sive Oleum Ricini' as a gentle purgative. The seeds were admitted to the London Pharmacopoeia, 1788, with instructions for the cold expression of the oil. In 1777 Joseph Gurney Bevan of Plough Court only stocked 2 bottles (= 2 pints) yet by 1782, 23 bottles were in stock and Renny (1807) reported that Jamaica had exported 236 casks of castor oil to Britain and 10 casks of castor seeds (1799). The seeds themselves were not favoured as primary medicine as their pharmacological action was much too violent; today it is known that the seeds contain toxins called ricins, protein complexes derived from amino acids and sugars. Ricin D, comprising 493 amino acid and 23 sugar units is particularly lethal. Castor oil retained its popularity well into the 20th century.

Manna, the sugary exudation of the Manna-Ash *Fraxinus ornus* L., a small tree of the Olive family (Oleaceae) grown in Italy, Greece and Asia Minor, was a useful laxative for children and delicate ladies because it did not excite inflammation. Manna, which exuded from incisions in the bark of the stems and trunk, contained 40-60 per cent of the hexahydric alcohol mannitol with related sugars based on combinations of fructose, glucose and galactose. Being of a pleasant, honey-like odour and sweet taste, manna was acceptable especially to children.

But why children and delicate ladies in the Royal Navy? –Officers' ladies, petty officers' wives and other ranks' women must have been aboard ship at some time. Female passengers were not unknown. The pharmacopoeia of Haslar Hospital also indicated preparations for women and children.

A mild saline purgative included in the list was Cream of Tartar or potassium hydrogen tartrate (HOOC.CH(OH). CH(OH). COOK). Its action occurred within two hours of administration yielding a watery motion without irritation; it was employed in dropsy treatment because of its complementary diuretic advantages. Purging Salt, Tasteless Aperient Salt or Sodium phosphate ($Na_2HPO_4.12H_2O$), was also used as a mild, saline aperient with some antacid and diuretic properties. It was considered useful for gout as it rendered the urine alkaline.

Sulphur, taken orally, is converted to alkali sulphides in the small intestine; their irritant effect causes a mild laxative action. Sulphur was also valued for tropical application in the treatment of scabies and other skin diseases.

Linseed oil from linseeds, the seeds of the flax plant *Linum usitatissimum* L. (family Linaceae), was, despite its disagreable taste, used as a mechanical laxative and also as an enema because of its soothing effect on inflamed mucous passages. Crushed linseed was commonly used as a poultice and the mucilage released by infusion of the seeds was prized as a demulcent for coughs (Linseed Tea).

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Emetics included in the list were established drugs such as ipecacuanha, the roots and rhizomes of *Cephaelis ipecacuahna* (Brot.) A. Rich., a Rubiaceous plant from Brazil, mustard, the dried ripe seeds of *Brassica alba* Hook. f. et Th. and *Brassica nigra* Koch (family Cruciferae), and the more powerful antimonials emetic tartar (antimony sodium tartrate) and golden sulphur of antimony (antimony pentasulphide). Large doses of chamomile flowers were also considered emetic.

Many drugs irritant to the mucous membranes were considered to function as emetics in larger doses and expectorants at lower doses. Thus ipecacuanha has a long record as an expectorant; squill, ammoniacum and Traumatic Balsam were also commended in the pharmacopoeias of the time. Squill is the sliced bulbs of the Liliacaceous plant *Drimia maritima* L. (Stearn) commonly found in Malta. Ammoniacum was the gum resin obtained from the flowering and fruiting stems of the Umbelliferous plant *Dorema ammoniacum* Don. which grew in barren areas of Persia. Squill, ammoniacum and ipecacuanha were often employed together in expectorant cough mixtures. Traumatic Balsam, also known as Compound Tincture of Benzoin or Friar's Balsam, comprised benzoin, aloes, storax and balsam of tolu macerated in 90 per cent alcohol and was taken orally for chronic bronchitis.

Stimulants were represented principally by the powerful, diffusible alcohol, Rectified Spirit of Wine. Pungents stimulants such as mustard and capsicum were also employed. Capsicum comprised the dried ripe fruits of the Solanaceous plant *Capsicum minimum* and related species referred to as Pod Peppers. Capsicums are believed to be of Central American origin. Products such as oleogumresin myrrh (from the stem of the Arabian *Commiphora molmol* Eng., family Burseraceae), the acid resin guaiacum (from the heartwood of the West Indian evergreen trees *Guaiacum officinale* L. and *G. sanctum* L., family Zygophyllaceae), the oleoresin copaiba (from the incised trunks of the tropical South American Leguminous *Copaifera* species), and the balsamic ester resin benzoin (from the incised stems of the Southeast Asian *Styrax* species, family Styraceae) were particularly used for debatable stimulant effects in bronchial and cough preparations.

Weak Spirit of Vitriol (Spiritus Vitrioli Dulcis), which was also known as Hoffman's Anodyne, Spiritus Aetheris and Spirit of Ether. consisted of 1 part ether and 2 parts 90 per cent alcohol and was much used as a powerful, diffusible stimulant.

Other stimulants used were often aromatic and carminative. Therefore the list offered ginger (the scraped rhizome of Jamaican *Zingiber officinale* Roscoe. family Zingiberaceae), pimento (the fully grown but unripe fruits of the West Indian *Pimenta officinalis* Lindley, family Myrtaceae), cinammon (the dried inner bark of coppiced evergreen trees of Ceylonese *Cinnamomum zeylanicum* Nees, family Lauraceae) and peppermint (the fresh flowering herb of European *Mentha piperata* L., family Labiatae). These drugs all yield variable amounts of volatile oils and produced pleasant flavours. Chamomile, the flower heads of the common or Roman chamomile, *Anthemis nobilis* L. (family Compositae), could be formulated for an aromatic and stomachic action.

Among the demulcent drugs in the list was gum arabic, a polyuronide carbohydrate obtained as a dried gummy exudation from the stems and branches of the Leguminous *Acacia* species, especially *A. senegal* Willd. from the Upper Nile region. Gum arabic produces an aqueous mucilage which was valued for its emollient and nutritive qualities. Subsequently acacia became increasingly important as an adjuvant in preparing suspensions and emulsions and in pillmaking and tableting.

Linseed and almond oils, apart from their mild, mechanically laxative effect, were emollient and demulcent and useful in ointments and soothing creams. Almond oil is the fixed oil obtained by expression from the seeds of *Prunus communis* Arcang. var. *dulcis* Schneider (sweet almond) or var. *amara* Schneider (bitter almond), Rosaceous trees growing in countries bordering the Mediterranean Sea.

In the sugested armamentarium of the naval practitioner were sedative drugs such as camphor, a white, dextroratory ketone ($C_{10}H_{16}O$) obtained from the wood of the far eastern Lauraceous tree *Cinnamomum camphora* Nees. Camphor was synthesised by Kind in 1804 and available commercially as a synthetic drug from 1823 onwards. Although initially stimulant, camphor soon demonstrates sedative, antispasmodic and diaphoretic activity; externally it was considered to be a useful counterirritant in Camphorated Oil.

Hops, the dried strobiles of *Humulus lupulus* L. of the family Moraceae, was regarded as moderately narcotic and useful in allaying irritation of the genito-urinary organs and in the treatment of alcoholism.

The main analgesic in 1800 was undoubtedly opium together with its acoholic tincture, laudanum. Opium is the spontaneously dried latex obtained after incision of the unripe capsules of the lilac poppy *Papaver somniferum* L. (family Papaveraceae), a species found in the Balkan countries, Asia Minor, India and the Far East. In addition to pain relieving and soporific actions, opium preparations arrested internal secretions although encouraging perspiration and therefore diaphoretic. The dangers of the continued use of opium, which could damage the intellect, impair the appetite and the digestion, and depress cardiac function, was realised.

Extract of Hemlock, the inspissated juice of fresh *Conium maculatum* L. leaves and branches, was also used as an anodyne and antispasmodic allaying coughs in bronchitis, pertussis and phthisis. Hemlock is a common Umbelliferous plant in southern Britain. Hemlock ointments and plasters were used to ease pain of haemorrhoids, anal fissures and cancers.

The principal antispasmodic drugs were Weak Spirit of Vitriol (Spirit of Ether), camphor, ammoniacum, hemlock and castor. Camphor was favoured in inhalations, in preparations for hay fever, as a counterirritant in liniments and for the relief of the irritation of nostrils in the treatment of colds. Ammoniacum found application as an antispasmodic and expectorant in the treatment of bronchitis and asthma and was formulated in pills of squill and ipecacuanha (Pil. Scillae Co.; Pil. Ipecac. et Squill). Hemlock was considered an effective antispasmodic and anodyne although quite toxic. The animal product castor, the dried preputial follicles and their secretions from the beaver, *Castor fiber,* was considered moderately stimulant and antispasmodic and was occasionally used for the

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treatment of hysteria but, by 1800, was already declining in use.

As tonics in spasmodic diseases such as epilepsy and chorea, zinc compounds had some application; therefore White Vitriol (zinc sulphate) and zinc oxide were listed. Zinc oxide (Flowers of Zinc) was useful externally as an astringent for application to skin eruptions such as eczema, in absorbent dusting powders especially in association with starch, and in ointments and pastes for ulceratous conditions. Zinc sulphate was also employed in collyria (eyewashes) particularly for conjunctivitis, and, as an astringent, in the treatment of gonorrhoea and indolent ulcers.

The promotion of excretion was allied to ridding the body of bad humours and thus diaphoretics, diuretics, expectorants and sialogogues were frequently used.

Listed are diuretics such as squill, a drug combining irritant expectorant activity with a cardiac slowing effect which improves kidney function and thereby causes diuresis. Copaiba acted on mucous membranes, especially of the genitourinary tract and rectum, and therefore found application as a urinary antiseptic in the treatment of gonorrhoea and gleet although used for chronic bronchitis with excessive secretion. Nitre (potassium nitrate, KNO_3) was respected as a diuretic with sedative and pulse rate reducing attributes as well as being useful in gargles for inflamed sore throats. Another inorganic diuretic was Salt of Wormwood, potassium carbonate, K_2CO_3, which combined diuretic and antacid properties.

The sweat-inducing diaphoretics are represented by ipecacuanha, camphor, opium, serpentary, Spirit of Mindererus and guaiacum resin. Serpentary root was obtained from *Aristolochia serpentaria* L., Virginian Snakeroot, and *A. reticulata* Nutt., Red River or Texan Snakeroot. Snakeroot was regarded as a tonic and diaphoretic for use in the low stages of fevers in association with ammonium carbonate. Spirit of Mindererus (Liquor Ammonii Acetatis) was valued as a diaphoretic and refrigerant in fever treatment, promoting skin and kidney excretion, and useful in alcoholism therapy. Guaiacum resin found application as a diaphoretic in the treatment of chronic rheumatism and for tonsilitis. Although employed as an emetic and expectorant, the ever-useful ipecacuanha was also valued as a diaphoretic and expectorant in the treatment of amoebic dysentery in the acute stages of the disease and in the treatment of bronchial and asthmatic conditions; as the stomach often rejected ipecacuanha, it was frequently formulated with opium.

The main sialogogue in the list is capsicum which stimulates saliva flow and gastric secretion and often appeared in fever formulations for low forms of fever, cholera, diarrhoea and alcoholic dyspepsia. Later it was used in such preparations with the newly found quinine (after 1820).

Antifever drugs apart from those already mentioned included wormwood or absinthium, the leaves and flowering tops of the Composite herb *Artemissia absinthium* L. which grows freely in Europe and northern Asia. Wormwood was regarded as a tonic and febrifuge and is still used worldwide in herbal medicine.

Much prized was cinchona, the Peruvian or Jesuit's bark, Cinchona, the dried bark of Rubicaceous *Cinchona* species from South America, had been introduced into England in about 1655 and was in use for the treatment of an epidemic remittent fever in 1658. Robert Talbor (Tabor), physician in ordinary to King Charles II, reputedly cured his monarch of tertian fever in 1679 using cinchona which had appeared in the London Pharmacopoeia of 1677 as Cortex Peruanus. Cinchona was employed in the treatment of remittent and intermittent fevers as well as possessing an antineuralgic reputation and being used for local application in powdered form on foul ulcers. Quinine was not isolated until 1820 (Pelletier and Caventou) and malaria was not understood until Sir Ronald Ross connected mosqitoes and malaria in 1897. Nevertheless it was recognised that yellow cinchona barks, which are now known to contain more quinine, were more effective in fever treatment than red barks.

Bitter drugs, acting by tastebud reflex action, have long enjoyed favour as tonics. The list included gentian, the dried rhizomes and roots of the herbaceous Yellow Gentian, *Gentiana lutea* L. (family Gentinaceae) from Central Europe. Gentian was a general tonic used when atony of the stomach was diagnosed. Quassia, the stem wood of the Jamaican Simarubiaceous tree *Picroena excelsa* = *Picrasma excelsa* (Sw.) Planch., contains no tannins and was valued as a non-astringent bitter tonic. Cinchona, too, being both bitter and astringent was used as a tonic with antifever activity. Sarsaparilla, the dried roots of the Caribbean Liliaceous climbing plant *Smilax ornata* Hook. f., was generally used as a bitter tonic and alterative; its use in the treatment of secondary syphilis and skin diseases was questioned, particularly in the report of the Commissioners of Sick and Hurt at the time of Dr. Lind's residence at Haslar Hospital.

Astringents have figured in medicine from earliest times and the Naval Stores List included logwood, the tannin-containing red heartwood from the Leguminous tree *Haemotoxylon campechianum* L. found in Central America and the West Indies. Logwood was used for atonic dyspepsia, diarrhoeas, dysentery and passive haemorrhages and also as a red dye. Salts of Steel, ferrous sulphate heptahydrate, $FESO_4.7H_2O$, was recognised as a powerful astringent that could irritate the stomach but was useful in treating anaemias and debility by oral administration, ulcerated and erysipelatous surfaces by application as a lotion, and urethral and vaginal inflammations and prolapse of the rectum by 'injection'.

The only styptic listed was Traumatic Balsam (Friar's Balsam) which was a useful preparation for application to cuts, wounds and indolent ulcers.

The method of external treatment of pain by counterirritants was provided for as mustard could be used as a rubefacient in liniments or as a mustard plaster for the pains of neuralgia, sciatica, bronchitis, pneumonia and inflammations. Cantharides, *Cantharis vesicatoria* Latreille, the Spanish or Blistering Fly, was more vesicant and used as Charta Epispastica (blistering paper) or Eplastrum Cantharides (blistering plaster). Capsicum and turpentine, the volatile oil obtained from various species of the Coniferous *Pinus* species, were also used as counterirritants, especially in rheumatism liniments.

Internal malfunction due to hyperacidity was catered for with antacids such as magnesia (magnesium oxide, MgO), which was also laxative and often used with other purgatives, and prepared chalk which was astringent and

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therefore constipant ($CaCO_3$) open quarried in chalk mines and purified by repeated elutriation. An alternative source of calcium carbonate was oyster shells, the shells of bivalved molluscs of the Ostreidae and Aviculidae families, but by 1800 the use of oyster shell was declining. Salts of Wormwood (potassium carbonate) combined antacid action with diuretic activity, and ammonium carbonate, Salts of Hartshorn (NH_4HCO_3) was rich in added value being considered antacid, expectorant, stimulant, sudorific and antiseptic and widely used especially with ipecacuanha in bronchial formulations. Castile soap (Sapo durum) was also antacid and laxative and was employed in pills, partly therapeutically, partly as excipient. Hard soap was prepared from sodium hydroxide and olive oil. large and frequent doses were considered useful for the removal of gall stones.

Venereal disease treatment necessitated the inclusion of mercury and corrosive sublimate in the list. Crude mercury, Argentum Vivum or Hydrargyrum, was rarely administered on its own. In minute subdivision in Mercury with Chalk (Hydrargyrum cum Creta; 1 part Mercury, 2 parts Prepared Chalk (by weight), or in pill form, mercury increased the internal secretions and its effect was measured by the rate of saliva flow. Mercury was recommended as an alterative, indirect chologogue, purgative, diuretic and glandular stimulant. It was employed in the treatment of syphilis, both internally in sub-salivation doses and externally as ointment or liniment.

Crude mercury required skill in pharmaceutical manipulation if satisfactory galenicals were to be manufactured. Corrosive sublimate (Hydrargyri Perchloridum, mercuric chloride, $HgCl_2$) was easier to formulate, being soluble in water and alcohol. That corrosive sublimate was dangerous is confirmed by early references to the use of large quantities of raw eggs as an antidote to overdosage. Although escharotic, it was used especially for its antiseptic and disinfectant properties in lotions, gargles, ointments and 'injections' (urethral washes) for ulcerated and syphilitic conditions, and skin diseases.

Cordial Confection was included in the list. Cordials were heart stimulating preparations in a syrupy vehicle. Cordial Confection or Confectio Cardiaca was initially called Confectio Raleighana and contained about 25 ingredients. The London Pharmacopoeia, 5th ed., 1746, reduced this number to 10 drugs and the Edinburgh Pharmacopoeia, 5th ed., 1756, further reduced it to 6 drugs. The main drugs used were carminatives and stimulants such as rosemary, nutmeg, ginger, cinnamon, orange peel, juniper berries, etc. Cordial Confection soon disappeared from the formularies and pharmacopoeias.

Other drugs and preparations listed functioned mainly as vehicles in formulation. Vinegar, dilute acetic acid, was used therapeutically to diminish perspiration and as an acid vehicle in preparations such as Vinegar of Squill (Acetum Scillae) and Vinegar of Ipecacuanha (Acetum Ipecacuanha). Rectified Spirit of Wine (alcohol) was useful in evaporating lotions containing camphor. Gum Arabic (gum acacia) was employed as a suspending agent for aqueous medicines, as an emulsifier permitting the incorporation of oils, and as a binding agent in pills and lozenges. The conserve, Conserve of Roses, derived from the ripe hips of the Dog Rose (*Rosa canina* L.) or the petals of the Red or Provins Rose (*Rosa gallica* L.), was used as a pill excipient as well as in linctuses and electuaries. Conserves were prepared from fresh plant material and sugar, the mixture being beaten into a uniform mass.

Blane's list effectively summarised the drugs of the day at the commencement of the 19th century and indicated that treatment comprised combinations of purgatives, emetics, analgesics, diuretics, etc.

Early treatments from Haslar Dispensary included pitch and rum (as surgical aids), leeches and blisters (which were considered a good cure for wooden-wall mariners who 'laboured' under illness or injury). Treatment seemed rough and ready, especially aboard ship.

In 1740 Sir James Barclay, Surgeon and Agent in Gosport, was accused of failing to ensure that medicines were properly compounded by the Dispenser. He indicated that the thought that 'Scorbutics, Electuarys, Itchy Ointments and Antifibrific Powders might be done (that is, dispensed without measurement) without any predjudice to the Patient'. Apart from thereby referring to the common medicines in general use, Barclay was demonstrating a cavalier attitude to medicines on shore.

Disease was the major problem in the Royal Navy. Sir Francis Drake (1540-1596) set out with 100 men on the global voyage of the 'Golden Hind' (1577-1580) but only 56 returned, disease claiming the lives of their comrades. In 1596 Drake's fleet was decimated by fever and he himself died at sea off Puerto Bello, which is now called Portobelo, Panama.

Captain James Cook (1728-1779) achieved distinction by defeating scurvy during his long voyages at sea (1770-1779). He insisted on cleanliness and good ventilation in crew quarters and a diet including cress, sauerkraut and a kind of orange juice. Significantly, having conquered scurvy on a long voyage. Cook lost 30 crew members with fever and dysentery after calling at Batavia (modern Djarkata) in 1770.

Admiral Lord Nelson successfully attacked the Spaniards at San Juan in 1779 but his fleet was almost wiped out by yellow fever. He had suffered personally from fever, probably malarial, in 1775. It is not surprising, therefore, that Nelson encouraged better medical services in the Royal Navy as well as the treatment of subordinates as individual human beings.

These examples show that before the 20th century disease was more lethal than wounds in the Royal Navy; it was ultimately realised that good food, clean living conditions and pure water could eliminate avitaminosis, dysentery, bowel infections and starvation-induced conditions. The naval surgeon's chest with the recommended Naval List of Drugs could, in skilled and experienced hands, have alleviated the symptoms of many of the diseases despite the fact that the diseases were not really understood.

In the 19th century science was moving rapidly forward with ever improving knowledge of drugs, formulations and diseases, but much time was to elapse before the Royal Navy and, indeed, society at large, could enjoy the standard of medical care to which we are now accustomed.

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Irish Pharmacy's Struggle For Identity* Part Two

By James G. Coleman

In 1888 the Court of Queen's Bench, on a case stated, placed beyond doubt the exclusive right of pharmaceutical chemists and apothecaries to dispense medical prescriptions. This was a right which many chemists and druggists had been previously unwilling to admit. Nevertheless, due to the defective machinery provided by the Pharmacy Act of 1875, a large number of persons, although not possessing any legal status, secured a *de facto* position as chemists and druggists and were determined to hold on to their position. A Select Committee of the House of Lords became satisfied that poisons were being distributed throughout Ireland by ignorant persons and that the conditions of the Poisons Act were being ignored generally. The Pharmacy Act (Ireland) 1875, Amendment Bill was introduced into the House of Lords and was passed. It provided *inter alia* that none but licentiates of the Pharmaceutical Society of Ireland or of the Apothecaries' Hall should have the right to sell poisons. In the House of Commons the Bill received such strong opposition that the President of the Society (Mr. Brunker) came to terms with representatives of the Chemists and Druggists Association. Early in 1889 arrangements were made jointly by the Pharmaceutical Society and the Chemists and Druggists Association to re-introduce a modified Bill but at the last moment a section of the Council of the P.S.I. repudiated the compromise and intimated its intention of opposing the Bill. The outcome was the resignation of the President, the Vice-president and many influential members of the Council.

Early in 1890 the Chemists & Druggists Association of Ireland sent a memorandum to the Attorney-General for Ireland recounting the failure of the Pharmaceutical Society to legalise traders in poisons. It was pointed out that the Calendar of the Society for 1889 disclosed there were 329 registered licentiates of the Society. Of those, 104 were keeping open shop – 31 in Dublin and 17 in Belfast – so that outside these cities there were only 56 qualified pharmacists in all Ireland. The Chemists & Druggists, on the other hand, numbered 1800-2000. They claimed they were engaged throughout the country in selling drugs, poisons, acids, cattle medicines and such like articles which, without them would in most places be unobtainable.

In a statement Mr. Brunker said that the draft Amendment Bill had been accepted in principle by Irish Members of Parliament of all parties and that the only section to which opposition was threatened were 15 and 15, which provided for the payment of annual retention fees by both pharmaceutical chemists and druggists. It had been argued that the small amounts involved would hardly be felt by those concerned but medical members of Parliament displayed hostility to the proposal because the clauses could form a precedent which might afterwards affect them! The activities of the Chemist & Druggists Association resulted in the introduction of the Pharmacy Amendment Bill in May, 1890. Open warfare broke out immediately between the Chemist & Druggists' Association and the Pharmaceutical Society of Ireland. Each side approached members of Parliament to solicit support.

The first sign of a reasonable approach was a speech by Tim Healy in the House of Commons in which he requested the postponement of the Committee Stage of the Bill for a week to give the two sides an opportunity to compromise. Following this, after a great deal of bargaining and a number of amendments, the Bill passed into law in August 1890. its main features were:-

(1) Any person in business prior to August 1875 as a chemist and druggist could apply within 12 months for registration as a Chemist & Druggist and this would entitle him to be a seller of scheduled poisons, but not a dispenser of medical prescriptions;

(2) Any person who entered the business after August 1875 could take an examination which would enable him to sell scheduled poisons with the title "Registered Druggist";

(3) Provision was made for a new qualification, namely "Assistant to a Pharmaceutical Chemist";

(4) Clauses were included to rectify some of the ambiguities and omissions in the Principal Act (but unfortunately not all of them).

Adendum. Statistics of the Pharmaceutical Society for the year 1892 show that there 442 pharmaceutical chemists on the register (including 12 of the original Council); 316 chemists and druggists had been registered without examination; and 292 registered druggists had qualified by examination. Fifteen years later the number of pharmaceutical chemists had increased to 772; the number of chemists and druggists had declined from 316 to 195; and the number of registered druggists had increased from 292 to 557. These figures indicate that the number of druggists and chemists and druggists combined was approximating the number of pharmaceutical chemists. By the end of the first World War the pharmaceutical chemists had increased their lead by over three hundred but there were still over 700 druggists on the register. Many of the druggists continued to dispense medical prescriptions illegally, and this tended to sustain the feeling of aggrieved hostility shown by the early pharmacists. The Society endeavoured to check the practice by initiating proceedings against druggists discovered in the practice but this only served as a challenge to the more venturesome. Finally the problem was solved by negotiations which resulted in the passing of the Pharmacy Act, 1951, which enabled registered druggists to qualify as dispensers of medical prescriptions by passing a special examination in compounding and forensic pharmacy. In return, the registered druggists surrendered their right to take apprentices. This of course means the eventual extinction of the species and the realisation of the first Council's ideal.

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Extracts from the letters of Madame

Translated and edited by Gertrude Scott Stevenson, London, Chapman & Dodd, 1924. Being the Correspondence of Elizabeth-Charlotte of Bavaria, Princess Palatine, Duchess of Orleans, called "Madame" at the Court of King Louis XIV.

The Princess Elizabeth-Charlotte was born in 1652 in Heidelberg Castle. She was the daughter of Charles-Louis, Elector Palatine, who was sister of Sophia, Electress of Hanover. Elizabeth-Charlotte was thus cousin to the future George I of England, and second cousin to Queen Anne and her sister Mary, and their half-brother James III the Old Pretender. When nineteen she was married to the 31 year old Phillippe of France, Duke of Orleans, the King's only brother so that she was well placed to gather in all the gossip, and because she loved to write letters, to disseminate it too. She had a large number of correspondents, but her favourites were the Electress Sophia who had acted as a mother to the five year old girl on her parents' divorce, and her half-sisters the Raugravine Louisa and Raugravine Amelia-Elizabeth.

Madame had extremely trenchant views, which she was not afraid to express, and included those on the subjects of doctors and the practice of medicine.

In November 1672 she was pregnant (P.21 Vol I) and wrote to the Duchess of Hanover, "When at last this egg is laid, I should like to send it to you at Osnabruck, because you know better than anyone in this country what to do ... I know from my own experience that you would take good care of it. Here, no baby's life is safe. The doctors have already dispatched five of the Queen's children into the next world. The last three weeks ago, and they have done the same for three of Monsieur's children. He told me so himself. (Monsieur was the name given to the Duke of Orleans; he had previously been married to Henrietta of England, sister of Charles II who died under suspicious circumstances.)

Childhood was certainly fraught with danger in the 17th. and 18th. centuries(P.252). In 1705 she wrote to her half-sister, "The poor little Duc de Bretagne died last Monday. I am firmly convinced that the doctors dispatched the poor little prince into the other world with their blood lettings and emetics. But no one listens to me...".

Although it is often said that the doctors were unable to clearly differentiate between measles and small-pox at this period, certainly Madame recognised them to be different diseases. In 1719 (p.226 V.II) she writes of "Terrible maladies, such as small-pox, meales and fiery fever are doing a great deal of mischief at Paris..." She also appeared to be able to recognise a measles rash.

Madame had her beliefs in certain remedies (p. 251 vol.I) "Urticaria is not a disease of childhood. I had it myself four years ago (i.e. about 1700), but the only remedy I used was to take a good dose of Lady Kent's powder to make me sweat freely, and the next day I was up and about again ... For several years now this ailment has been greatly the fashion, but it does not render one immune from anything else, because the same year I had a quartan fever lasting two months." Presumably Madame did not mean the same illness as we do when describing urticaria.

"Milady Kent's powder is an excellent remedy and one not to be despised. It won't make you sweat unless you take a very large dose ... I should think that the drops which did so much good to you and to so many others must be the English drops. A grain of opium makes a hundred of them with the addition of two roots of which one is called asarum and the other sassafras. There is no better remedy for the chest." (p.60 vol.II)

Madame wrote to the Raugravine Louisa (p.165 Vol.I) "Many thanks, dear Louisa, for your offer to send me pure drugs from the pharmacies in Frankfort. When I need anything I shall ask ... We can obtain better cherry brandy here ... if, however, you would send me a little flask of the Emperor Charles' water for headaches, and let me know the price, you would be doing me a great service. It is the only thing that made it possible for me to spend last winter at Paris. As soon as I entered the town I put the bottle to my nose. That is how I avoid headaches."

On 9th August 1714 she wrote to Louisa (p.76 Vol.II) "Last Tuesday my doctor bled me, and on Thursday and Friday he purged me with such effect that I had to retire to my wardrobe thirty times. Perhaps you know the drug which had such a drastic effect on me. It is a new medicine, and is a salt which comes from England, but is so fashionable that no one in Paris will take anything else. It is called Epsom salts. It has to be dissolved in water, and the first day they made me drink three large beer glasses of it, and two the second day."

Madame's pungent views concerning the medical profession were not hidden, as she wrote her sister (p.253, vol.I) "When I chose my doctor, I warned him that he must not expect blind obedience from me. I would allow him to express his opinion, but he must not get angry if I did not always follow it. My health and my body are my own, and I expect, as I told him, to rule them after my own fashion."

It is pleasing to relate that Madame thought very well of her husband's apothecary a scholarly man called Humbert. Monsieur was interested in the sciences particularly chemistry, and had his own laboratory where he worked with Humbert. Madame told the Electress Sophia (p.51, Vol.II) "To know Humbert is to like him. His mind is clear and not at all befogged as the minds of scholars usually are. Nor has he their pedantic gravity, but is, on the contrary, always gay. All his learning, even on the most abstruse subjects, seems to be for him but a pastime with which to amuse himself. He condescends to crack jokes and laughs at himself. I am sure you would like him." **J.G.L.B.**

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Foundation Lecture. Dr M.P. Earles and Dr J.G.L. Burnby, joint presentation on "Pereira Letters".

May 18
Joint meeting with the Pharmaceutical Society. Miss K. Arnold-Forster and Mr R.E.A. Drey "Pharmacy Jars".

April 22-24
Spring Conference, Stakis Paragon Hotel, Hull. Details to be announced later.

Note: except where indicated otherwise the meetings are to be held at the Pharmaceutical Society, 1 Lambeth High Street, London.

The Pereira Letters
A unique collaboration between BSHP and the American Institute of the History of Pharmacy has resulted in the publication of *"My Dear Mr. Bell": Letters from Dr. Jonathan Pereira to Mr. Jacob Bell, London 1844 to 1853*, edited by C.P. Cloughly, Dr J.G.L. Burnby and Dr M.P. Earles, price £4.50, By Post £5. A bound paperback illustrated and fully indexed gives an insight into the nine formative years of the Pharmaceutical Society and the policy of the *Pharmaceutical Journal.*

The first thirteen pages provide an extremely useful introduction dealing with the medical and pharmaceutical politics at the time. The transcriptions of the letters take up the succeeding 100 pages and provide a fascinating albeit one sided view of the relationships between Pereira, physician at the London Hospital and Jacob Bell, editor *Pharmaceutical Journal*. The book enables more historians to have access to the letters, unfortunately the print-run had to be limited and members wishing to obtain a copy should apply *immediately* to Dr L. Howden, 36 York Place, Edinburgh EH1 3HU.

Book Received
Medical Science and Medical Industry: The Formation of the American Pharmaceutical Industry. Jonathan Liebenau. Macmillan Press pp 207 Hard Backed £29.50.

Isabella Inglish's seal: see page 2.

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GRANA ANGELICA

Patrick Anderson and the True Scots Pills.

By W.A. Jackson

Some time ago, at an antiques fair, I came across an oval wooden pill box 6cms. in length, on the lid of which was a black wax seal. On this was a man's head above a shield which carried a rampant lion below three five-pointed stars or mullets. On either side of the head were the letters 'I.I.' and underneath the shield was a scroll bearing the name 'ISABELLA INGLISH'. Around the top outer edge of the seal was inscribed 'DR. PATRICK ANDERSON'. I was intrigued by the box, and bought it in the hope of discovering something of its history. This paper is the result of my research into the subject to date.

One of our oldest so-called 'Patent Medicines' was Anderson's Scots Pills, a purgative which enjoyed great popularity for many years. It was on sale in the 1630s and was still to be found listed in a catalogue published in 1916.

It was first sold in this country by Patrick Anderson, a doctor who was reputed to have been physician to Charles I. Little is known of his early life, and there is doubt as to whether he actually held a medical degree. In addition to achieving a considerable reputation as a doctor in Edinburgh, London and Paris, he was the author of several works, including a three-volume History of Scotland and *'The Colde Spring of Kinghorne Craig'* (a spring in Fife which had medicinal properties.)[1] However, the book which is of great interest to students of medical history is *'Grana Angelica'*, published in 1635, a treatise in Latin describing the virtues of his pill. The title of the book is said to be taken from a couplet by John Adamson, who was principal of Edinburgh University in 1623. This was printed at the beginning of Anderson's book, and runs:

> "Angelice quicumque volet producere vitam, Grana Andersoni comparet Angelica."

(Freely translated this means "Whoever wishes to prolong life angelically, should obtain some Anderson's Pills).

In *'Grana Angelica'* Anderson states that he obtained the formula in Venice about the year 1603. This is said to have been deposited in the Rolls House in Edinburgh, but according to Hennigan[1] the Public Records Office is unable to trace it, and the earliest one which I have been able to find was published by the Philadelphia College of Pharmacy in 1824[2] and is reproduced below:

"ANDERSON'S SCOTS PILLS.

These pills are a mild aloetic purgative, with which, according to the judgment or fancy of the preparer, various adjuvents are combined. The formula submitted by the committee will, it is presumed, be liable to as few objections as any.

RECIPE

Aloes Barbadensis	787
Saponis	131
Colocynthidis	33
Gambogiae	33
Olei Anisi.....	16
	1000 parts

Let the Aloes, Colocynth and Gamboge be reduced to a very fine powder, then beat them and the Soap, with water, into a mass, of a proper consistence to divide into pills, each containing three grains."

The 'Codex, *Pharmacopée Francaise'* of 1839[3] gives a formula for "PILULES D'ANDERSON. (Pilules Ecossaises)" containing; Aloes, Gummi Guttae (Gamboge), Aniseed Oil and Simple Syrup. Beasley[4] lists four different formulae, one of which

Pill Box, 6cms. in length, bearing Isabella Inglish's seal in black wax. (Author's collection.)

contains Aloes, Jalap, Powdered Aniseed, Ivory-black and Oil of Aniseed; and another, Aloes, Black Hellebore, Jalap, Subcarbonate of Potash, Oil of Aniseed and Syrup of Buckthorn. The 1899 edition of *'Pharmaceutical Formulas'*[5] states that the pills ".....are well represented by Pil. Aloes et Myrrhae, B.P., which, (saving excipient) contains the same ingredients as those mentioned in a copy of the original document deposited in the Rolls House."

There can be no doubt that the right to manufacture and sell the pills was of great financial value, and Anderson left ".....the secret secret and skill of preparing the pill" to his two daughters with ".....power only to the survivor of them to communicate and transmit the secret to some fit and qualified personne." The surviving daughter was Katherine Anderson, and in 1686 she sold the formula to Thomas Weir, an Edinburgh surgeon. (A deed registered in the Comissary Court books of Edinburgh on 16th December of that year declared that she had communicated the secret of their preparation to him and to no other person.) In 1687, Letters Patent for the pills was granted to Thomas Weir by King James II, and confirmed by Letters of Certification by King William and Queen Mary, as well as by Testification by the Town Council of Edinburgh in 1694.[6]

In 1705, Weir published a broadside entitled, "GRANA ANGELICA: or, The rare and singular Vertues and Uses of those Angelical Pills, discovered and left to posterity by Doctor Patrick Anderson, late Physician of Edinburgh."[7] This contains a list of conditions for which the pills were said to efficacious. It is a translation of the main section of Anderson's *'Grana Angelica'* summarised under the following headings:
1. For the pains of the Stomach. 2. For diseases in the Head. 3. For the diseases of the Belly. 4. Against worms. 5. For the bound belly of women with child. 6. For the pain of the head by vapours from the Stomach. For bleared eyes, dryness and paleness. 7. Stone, Scurvy, Cholick, Dropsie. For the Green-sickness and Palsie. 8 & 9. Against Cathars and defluction in the joynts the way of taking them. 10. For children and Old men.

* Abstract from a paper given at the History Session, British Pharmaceutical Conference, September 16, Manchester.

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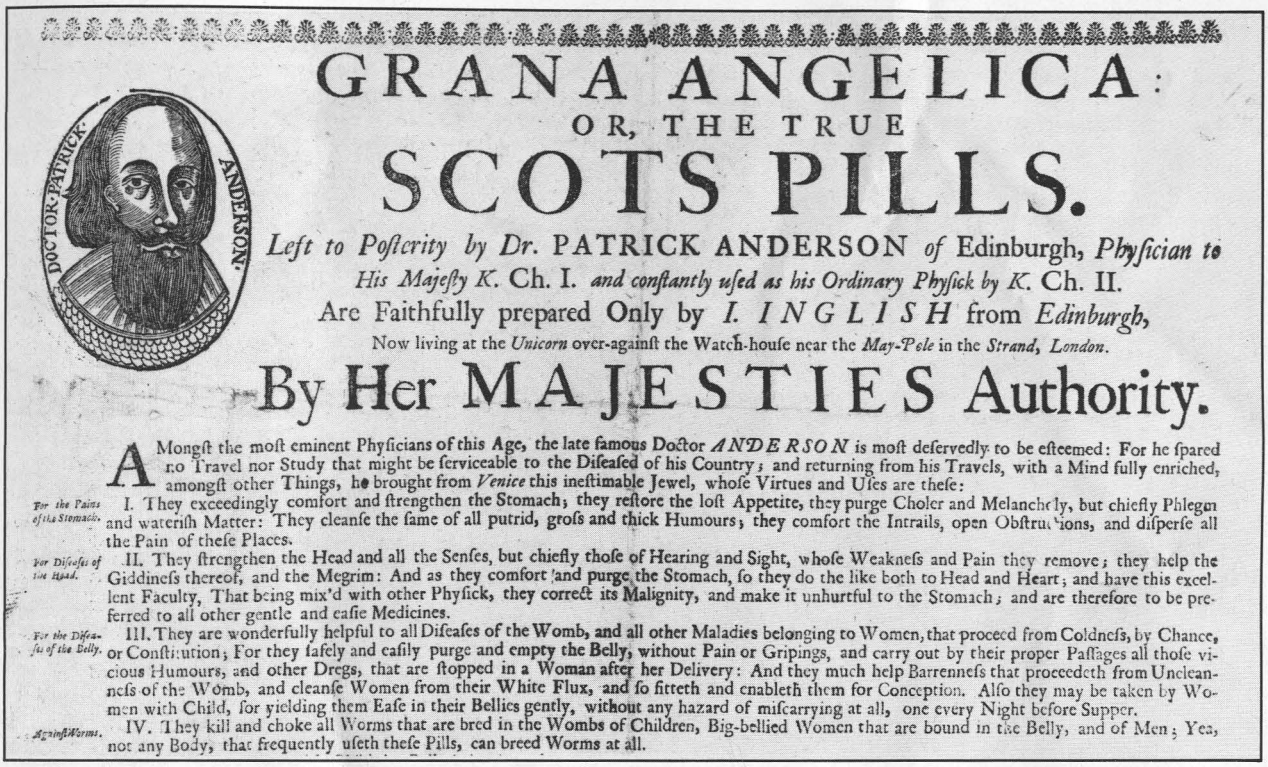

Isabella Inglish's Broadside. (Broadside No. 622. Reproduced by kind permission of The Society of Antiquaries of London.)

Our forebears must have had robust constitutions, for the dose given under section 9 is 3, 5, or 7 pills – ".....but let those who are hard to operat upon, take them three Nights without intermitting, and that three or four times a Month as necessity, or the temperature of the body shall require." Section 10 states: "They are so easie and innocent operation, that they may be given to Children and decript old Men, and that most securely;" It is obvious that Weir was troubled by competition from others who claimed to possess the secret of making the 'True Scots Pill', for the final two sections of the broadside are devoted to justifying his own claim, and a warning against spurious imitations.

"11.....these upright pills are now made and sold by THOMAS WEIR CHYRURGEON in Edinburgh, to whom only the secret of composeing the same was communicated by KATHERIN ANDERSON, daughter to the above mentioned Doctor Anderson who (to obviate the Designs of any other persons that might Pretend to any skill and knowledge in the making up the said Pil after her death) did by an Assignation and Declaration, made by her in favour of the said Thomas, not only assign him to the Receipt, Vessels and Instruments for making up the sais Pil, during all the days of his lifetime; but who declared that the secret of composeing thereof, had never been revealed by her to any other:

12. So that whoever may have occasion for any of the said Pils, they may call for the same, at the said Thomas Weir his shop and Lodging in Edinburgh, on the North side of the high Street of the same, in the new great Stone-land† opposite to the West-bow head at the Iron Ravel-stair; and no where else; And for the more security call for a printed Copy, and Doctor Anderson's own Picture at it, and all the boxes are sealed with his FACE, NAME and ARMS, and K A for his Daughters Name, without which they are none of his ..."

In 1824, the pills were still being sold from the same address. This is described as being on the second floor of a tenement in the Lawn Market, the door of which had the date 1690 on the lintel. It contained portraits of Patrick Anderson and his daughter Katherine, the former having a book in his hand, (presumably a copy of *'Grana Angelica'*), while the lady is holding a pill "about the size of a walnut". A glove which had belonged to the physician was also on display[8] 'The Rival Pills',[6] states that they could still be bought here in 1839, and mentions Dr. Anderson's portrait, in which he is said to be looking through an archway or window, under which are the words: "Dr. Anderson's Pills sold here." The author however believed (probably mistakenly) that the object in his hand was a pill-box. Wootton[9] confirms that the house, with the date 1690 on the door lintel, still existed in 1910, but the area has now been redeveloped, and I was unable to find it when I was last in Edinburgh.

In 1711, all rights were assigned to Dr. Weir's widow, who left them to her son Alexander in 1715, and he in turn left them to his sister Lilias Weir in 1716. (The deed states that, in addition to the materials and utensils for manufacturing the pills, she received Anderson's seal, which was used to seal each box.)

Upon Lilias Weir's death in 1770, they became the property of her nephew, Dr. Thomas Irving, Surgeon to the 14th Regiment of Dragoons.[6] They remained in the Irving family for almost a hundred years, passing in 1797 to his widow who transferred them to her son James in 1814. Mrs Irving was a well-known figure in Edinburgh. She seems to have been a woman of great strength of character, and it is believed that she retained an interest in the production and sale of the pills until her death in 1837 aged 99.

In 1863, the rights were acquired by Mr. J. Rodger from James Irving's trustee, and he issued a leaflet[10] tracing the descent of the original recipe from Patrick Anderson to himself. Again purchasers are warned against possible imitations.

> "Mr. Rodger has enclosed each box in a wrapper, subscribed by himself, and sealed with Dr. Anderson's seal, without which they are undoubtedly counterfeits. They are sold only in boxes at 1/1½; (approximately 5½p), each box containing thirty pills. In Typhus Fever, Scarlatina, and in Fevers generally, their free use has been attended by the happiest results. One pill is a full dose for a Child of five or six years of age, two or more for an Adult."

† (Land was a term used in Scotland for a tenement.)

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GRANA ANGELICA:

OR,

The rare and singular Vertues and Uses of those Angelical Pills, *discovered and left to Poster* by *Doctor* Patrick Anderson, *late Physician of* Edinburgh.

AMongst the most eminent Physicians of this Age, the [illegible] Doctor Anderson is most deservedly to be esteemed; for he spared no Travel nor Study, [illegible] he might be serviceable to his Country; and returning from his Travels with a mind fully enriched, amongst other things he brought from [illegible] Uses are these;

I. They exceedingly comfort and strengthen the Stomach, restore the lost Appetite, they purge Choller and Melancholly, but chiefly Phlegm and waterish Matter: They cleanse the same of all grosse and thick Humors; they comfort the Intrals, upon Obstructions, and disperse all the Pain of these Places.

For the pains of the Stomach

II. They strengthen the Head and all the Senses, but chiefly Hearing and Sight, whose weakness and pain they remove; they help the Giddiness thereof and the Megrim: And as they comfort purge the Stomach, so they do the like both to the Head and Heart; and have this excellent faculty, that being mixed with other Phy[illegible] they correct its Malignity, and make it unhurtful to the Stomach, and

For diseases in the head.

are therefore to be preferred to all other gentle and easie Med[illegible]ures.

III. They are wonderfully helpful to all Diseases of the Wo[illegible] and all other Maladies belonging to Women, that proceed from coldness by Chance or Constitution: For they safely and easily purge a[illegible] empty the Belly without Pain or Grippings, and carry out by their proper

For the diseases of the Belly.

passages, all those vicious Humors and other Dregs that are stop[illegible]ed on a Woman after her Delivery: And they much help Barrenness that proceedeth from uncleaness of the Womb, and cleanse Women from their White-flux, and so fitteth and enableth them for Conception. Also they may be taken by Women with Child, for yielding [illegible]m ease in their Bellies gently, without any hazard of miscarrying at all, one every Night before Supper.

IV. They kill and chock all Worms that are bred in the [illegible]nbs of Children, big-bellied Women that are bound in the Belly, and of

Against Worms.

Men, yea, not any body, that frequently use these Pills, can [illegible]reed Worms at all.

V. And if in Women with Child the Belly be bound, which often happeth, you must have a special care that in the time of her Birth, the great Guts, being extended with Excrements, doth not augment her Pains in Travel; to avoid which, it is my counsel, that in such cases,

For the bound belly of women with Child.

you have always ready in your Cabinet some of these Pills, especially seing neither Clisters nor Suppositers are so convenient, because they trouble and irritat these lower places about the Womb, which may cause Abortion: Then these Pills, yea even in the time of delivery (as has been observed by many) being taken in a new laid soft rosted Egg, have afforded great help, without any danger at all.

For the pain of the head by vapours from the Stomach.

VI. They do not indeed purge the whole body, but they gently purge and throw out in the siege, all Choller that is seated in the Stomach and Intrals: Therefore they are to be given to them who are tormented with a sore head, by reason of the noisom vapours that contiually ascend thereto from the Stomach. And for the same reason they are to be given to them that are blear-eyed, and to them, who by the growth of Choller are continually thirsty, and have their Mouth and Tongue always dry, and find an heat and loathing, with an over-

For blear'd eyes, dryness, and paleness.

turning in their Stomach. They are moreover to be given to those that are against nature over-much pale: And who have need to be delivered of superfluous Humour of the Body.

Stone, Scurvy, Chollick, Dropsie.

VII. They hinder likewise the procreation of many Diseases, [illegible]nd the corruption of the Food: And wonderfully defend the body against surfeits in Eating or Drinking, which most frequently after Sleep beget corrupt and crude Humours, and so are a soveraign help for the Gravel, Scurvy, Chollick and Dropsie, and Green-sickness and Palsie, one every day.

For the Green-sickness and Palsie.

VIII. If the Head, subject to Defluctions, keepeth intelligence with a moist and soming Stomach, and threatneth the Joynts with a deluge, these Angelick Grains will so stop their Streams, that famous Physician hath promised they shall be free from the Gout, and all other

Against Catharrs and defluctions in the joynts the way of taking them.

Diseases of the Joynts, who shall use these Pills frequently and familiarly: for by them the daily Crudilities and Superfluities of the Meat being taken away, and carried into the Sink of the Belly, they cannot harm the Joynts at all, nor procure Diseases, which otherways could not be avoided; whilst the more noble parts, being oppressed therewith, could not, but for their own preservation, send them to be quartered in the baser parts of the Body.

IX. Ye may use of them at your pleasure, whether late or early, or at any hour of the day, before Meat, or after Meat, or in the time of feeding; but being taken in time of Supper, they defend the Head (as we have said) from those vapours and fumes that ascend to it in the Night. They are familiarly taken in time of Meat, without trouble to the mind, or harm to the Body, and not any hindrance of your Business. The Dose is, three, five, or seven; but let these who are hard to operat upon, take them three Nights without intermitting, and that three or four times a Month, as necessity, or the temper of the body shall require. They give not many Stools, neither do they work violently, nor suddenly: Sometime they open the belly twelve hours after they are taken, sometimes sooner, according to the disposition of the Stomach and body; and they may be used without any special care of Rules in your Dyet, whither in Summer or Winter, in Frost or in Thaw Weather, without any inconveniency to ensue thereupon.

[illegible]

Thomas Weir's Broadside. 1705. (Reproduced by kind permission of The Right Honourable The Earl of Crawford and Balcarres. Broadside No. 911, The John Rylands University Library of Manchester.)

The portrait of Dr. Anderson at the top of this leaflet may well have been copied from Anderson's portrait previously described. Mr Rodger sold the rights to Messrs. Raimes, Blanshard and Co. in 1876, and the pills were still being sold by their successors, Raimes, Clark and Co. in 1910.[9] They are said to have made their final appearance in a catalogue of 1916.[1].

It has been apparent that, throughout their life, Anderson's True Scots Pills were the subject of copies and imitations. One of the earliest of these were made by Thomas Steill, a merchant, who after initially defending himself successfully against Weir's appeal to the Privy Council, was finally denounced as a rebel by it in 1698, and was 'put to the horn'. (In Scotland, the messenger-at-arms went to the Cross in Edinburgh and gave three blasts on the horn before heralding the judgement of outlawry.) Weir's successors also won appeals against a person named Stevenson, and against Cecilia Miller, who was fined and imprisoned in 1722.[6]

However the most serious competitor was a lady named Isabella Inglish. In spite of the fact that Edinburgh Town Council denounced her pills as counterfeit in October 1690, they continued to be sold by her and her successors for more than 150 years as the "True Scots Pills, left to posterity by Dr. Patrick Anderson of Edinburgh." It is believed that she had been a servant of the family of Thomas Weir, and that she obtained some knowledge of the process of making the pills during this time, although the secret was never officially communicated to her. Perhaps the fact that she moved to London before starting to manufacture them may have been her salvation. In 1690, the records of The Edinburgh Town Council give her address as ".....the hand and pen in Longaiker, London."[6] The Society of Antiquaries of London possesses a broadside [11] issued by her during the reign of Queen Anne (1702-

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1714) which says that she is: "Now living at the Unicorn over-against the Watch-house near the May Pole in the Strand, London." The main part of this is so similar to the one issued by Weir in 1705 that it was probably copied from it, as it is unlikely that Mrs Inglish would have been able to translate from the Latin of Anderson's book.

An advertisement in the London Gazette of March 8th to March 11th, 1707, informed potential customers:

> "That Dr. Anderson's or the famous Scots Pills are faithfully prepared only by Mrs Inglish living at the Golden Unicorn over and against the Maypole in the Strand, London. To prevent counterfeits from Scotland as well as any about London, particularly near her habitation, you are desired to take notice that the true pills have their boxes sealed on the top (in black wax) with a lyon rampant and three Mullets argent. Dr. Anderson's head between I I with his name round, and Isabella Inglish underneath the shield on a scroll."

One cannot but be impressed by her impudence in warning people against "counterfeits from Scotland", and there must be a certain rough justice in the fact that she was obviously having trouble with other counterfeiters who were operating in her neighbourhood. One early 18th Century advertisement quoted in *The Chemist and Druggist* mentions "an ignorant pretender, one Mussen, who keeps a China Shop, and is so unneighbourly as to pretend to sell the same Pills within three Doors of me."[12]

Obviously her advertising was successful, for an article published in April 1839[6] reports that the controversy as to which was the 'True Scots Pill' was still raging between Mr. Inglish of London and Mrs. Irving of Edinburgh, both of whom claimed to exclusive possession of the secret of their manufacture. it seems likely that the article took some considerable time to write, or was delayed in publication, as Mrs Irving died in 1837, and Mr. James Irving was the proprietor of the pills at that time.

Later in the century, the stock book of David Williams,[13] a druggist of Pwllheli, which contains entries ranging in date from 1847 to 1884, lists both Anderson's and Inglish's Scott's (sic) Pills; and as we saw in the leaflet printed circa 1863, Mr Rodger still found it necessary to trace the ownership of the patent to himself, "the present and only proprietor."

I have been unable to trace any later reference to Inglish's Pills, but it is surely remarkable that the two 'True Scots Pills' should remain rivals for more than 150 years, and that we do not lose trace of the counterfeit until sales were obviously declining, presumably due to the proliferation of 'Patent Medicines' which occurred about this time.

A number of questions remain to be answered.
It is generally accepted that the name 'Grana Angelica' or 'Angelical Pills' was derived from Adamson's couplet, but there is another possibility. Quincy[14] gives a formula for 'Pilulae Angelicae' containing Senna, Rhubarb, Myrrh, Agaric, Benjamin (Benzoin), Saffron, Violet and Borage Flowers, Juice of Succory clarified, Fumitory, Borage, Aloes, Balsam of Peru, Oil of Nutmeg, and Salt of Wormwood. He states: "This is a preparation of Angelus Sala and comes to us greatly recommended for a mild purger, and an excellent cleanser and strengthener of the Viscera, but particularly the stomach and bowels. It may be given from a scruple to a dram at a dose." Less than fifty miles from Venice, where Anderson discovered the formula for his pills in 1603, Angelo Sala was born between 1570 and 1580 at Vicenza in Italy. Accounts of his early life are contradictory, one saying that he was practising in Dresden by 1602, and another that he left Italy in 1609 and went to Switzerland. He was the author of many works on medicine, including one written in Italian and then translated into Latin, one edition of which was probably published in 1602.[15] Could Anderson's formula have been taken from an early treatise written by Sala?

What has become of the original formula, said to have been deposited in the Rolls House in Edinburgh, but which cannot now be traced? Comrie[8] who was obviously under the impression that the Inglishes were a branch of the Anderson family, was shown their original recipe which was in the possession of a Mr Michael Duke. He says: "The Pills originally contained some 40 ingredients, and by various processes of mixing, steeping, boiling, straining etc., their preparation took four days to accomplish." This recipe for "Dr. Anderson's True Scotts Pills", all her interest therein and the method of manufacture, had been left to Mr. Michael Duke of Gregory Street, Nottingham, in the will of Mrs. Penelope Isabella Christie of Eastbourne, who died in September 1926. It is possible that this recipe is still in the possession of a member of the Duke family.[16] Examination of either of these formulae should determine whether Anderson took his formula from that of Sala.

Are Patrick Anderson's and Isabella Inglish's seals still in existence, and if so, where are they?

Young and Griffenhagen[17], in addition to describing Inglish's seal, mention that of a male competitor, – ".....in red wax with a coat of arms and a motto – strangely chosen for a medicine: 'Remember you must die.' "Did this belong to Thomas Steill (or Steel), and has it survived?
What has become of the portraits of Patrick and Katherine Anderson and the good doctor's glove?

It seems improbable that these queries will ever be answered, but one lives in hope. It was the casual discovery, at an antiques fair, of the pill box illustrated which initiated my research into the subject. Who can say what other artefacts still remain to be found?

Acknowledgements

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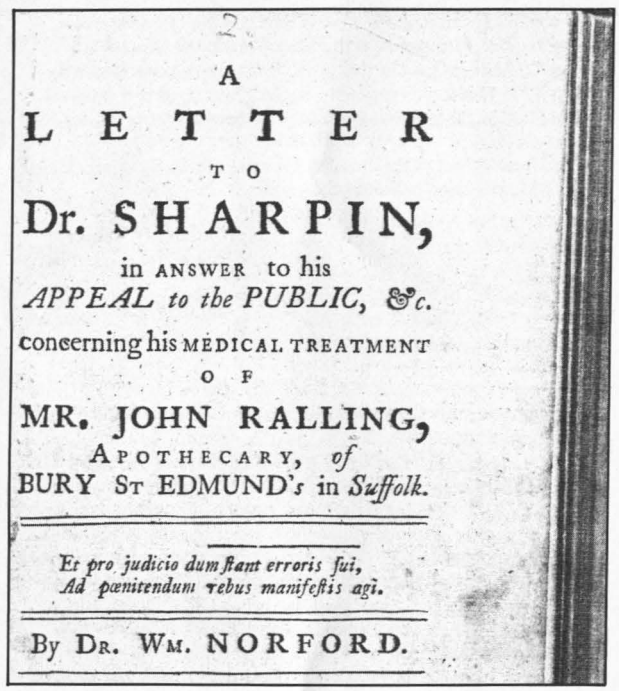
An 18th Century Controversy

By Noel J.G. Stow

A controversy involving two surgeons, a physician and an apothecary provides some insight into medicine, surgery and pharmacy as practised in a quiet Suffolk country town during the mid 18th century.

The case centred round John Ralling, an apothecary in the market town of Bury St Edmunds and began when a Dr Sharpin, physician, and Mr Thomas Steward, surgeon, had occasion to call in Mr Ralling's shop one summer Sunday in 1764, to prescribe some medicines for a patient. They found the apothecary in some physical distress and examined him and prescribed for him and continued to treat him during the ensuing week, however, during that week, another surgeon and physician, Dr Norford, became involved in the case, unbeknown at first to Sharpin and Steward. This led to a bitter feud between the three practitioners, Dr Norford was reputed to have claimed that without his intervention Mr Ralling "must have been a dead man", allegations on both sides culminating in a series of "Appeals to the Public", setting out rival treatments, being printed and published; a statement by the patient was also printed in the local newspaper.

Dr Sharpin was the first to publish his "Appeal" in which, in his words, gave a "full, though tedious account of their treatment".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A

LETTER

TO

Dr. SHARPIN,

in ANSWER to his

APPEAL to the PUBLIC, &c.

concerning his MEDICAL TREATMENT

OF

MR. JOHN RALLING,

APOTHECARY, *of*

BURY ST EDMUND'S in *Suffolk.*

Et pro judicio dum fiant erroris sui,
Ad pœnitendum rebus manifestis agi.

By DR. WM. NORFORD.

Case History

Mr Ralling is of Gross Habit and florid complexion, about 42 years of age, and had often been inflicted with the Piles, and about two years since with an irregular fever; during which the pulse was always observed to be weak, most of the Symptoms very similar to those in the case We are now treating; the crisis of it was partly by an Erysiplas and partly by an abscess; both on the same arm.

For some time past he complained of Pain, Weight and Bearing down of the Intestinum Rectum, which he himself imagined, preceded from what are commonly called the dry internal Piles, or Haemorrhoides Cacae. He had taken Magnesia Alba, Aethiops Mineralis and some 4ozs of Blood had been taken from the Arm to lessen the Fullness.

When the two called in his shop they found Ralling walking about his room and sometimes reclining on a couch, after an examination of his complaints which they described as appearing *but of small consequence* they advised him to take *one drachm of Sulphur precipitum with half a drachm of Magnesia alba, occasionally, to keep the body in a lax state.*

MONDAY JULY 16 1764

Clinical signs and symptoms: Feverish, restless, Pulse quick but weak, Warmth of the skin more than natural, urine small in quantity, very highly coloured and loaded with thick crude sediment.

Treatment: A dose of the Salt of Wormwood, with Huxham's Tincture of the Bark to be taken every three to four hours and next morning some manna.

TUESDAY JULY 17

Symptoms: Cold/Shivering alternating with internal heat and profuse sweats, which had continued the greater part of the night, which had been restless; pulse rather weaker, urine smaller in quantity and made with great difficulty, the tongue white and foul.

Treatment: A Decoction of the Bark, to be in readiness in case of there being a remission of the fever, to be taken every three or four hours. This was omitted as Mr Steward did not think him in a fit state for it.

WEDNESDAY JULY 18

Symptoms: Restless night, Pulse stronger, Thirst and urine the same but discharged with greater difficulty. Great anxiety and oppression on the Praecordia. On the left buttock the skin appeared red and inflamed with great hardness and tension and upon it near the anus many small pustular eruptions.

Treatment: Emollient fomentations to be used, morning and evening, applying after them a Cataplasm of White Bread and Milk, mixed with the yellow Basilicon. To take the common Emulsions with Nitre, or an emulsion made with Sperma Ceti, and a draught with Spirit Minderi, Nitre and Diacodium at night.

THURSDAY JULY 19

Symptoms: A very restless night, pulse very weak and quick, load and anxiety on the praecordia increased attended by great restlesness, urine made with more ease, the inflamed tumour on the left buttock now affecting the right.

Treatment: Decoction Sacrum of Fuller, 2ozs every four hours, fomentations with the common fomentation to which were added camphorated spirit of wine and the cataplasm to be continued.

FRIDAY JULY 20

Symptoms: 8am:- he had had a severe rigor about 1am and we found him very low with his pulse so feeble as scarce to be perceived. The Tumour on the external parts appeared of a more dusky red, upon pressure, yellow, soft and flabby to the touch.

Eve:- The symptoms much the same, except that the cuticle upon the inflamed parts elevated by many vesications filled with a great quantity of a yellow Serum, chiefly confined to that Part near the anus.

Treatment: Fomentations to be continued with the addition of double the qty of camphire in them, a bolus to be taken immediately, consisting of 1 scruple of Confectio Cardiaca, of camphire and Saffron, each 5 grains.

The vesications fomented and dressed with Digestive mixed with Oil of Turpentine. A Blister was applied between the Shoulders and the Decoction of Sacrum ordered to be taken punctually.

SATURDAY JULY 21

Symptoms: We found a gangrene broken through the skin near the anus, about the length and breadth of two fingers, with a large quantity of serum discharged. A better night with some refreshing sleep, stronger pulse, no thirst and tongue moist – a great change for the better.

Treatment: The spirituous Fomentations to be continued, a Cataplasm directed with Oatmeal, Old Beer, and the Cummin Cataplasm (The Cummin Cataplasm was omitted as Mr Ralling had not any in his shop; the same was directed to be made immediately) A decoction of the Bark with Snake Root and Huxham's Tincture of the same was ordered to be taken every four hours.

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SATURDAY EVE:-
Symptoms: The gangrenous part again scarified, had discharged a very large quantity of Ichor and all danger of it spreading farther had plainly ceased.
Treatment: The gangrenous part dressed in the manner above mentioned and the Decoction of Bark &c were ordered to be persisted in.
SUNDAY MORNING JULY 22
Symptoms: Mr Steward happened to be there first, when, to his surprise and astonishment, he found Dr Norford in Mr Ralling's room thundering a mortification in his ears, that he must have been a dead man without his assistance.
Treatment: Again scarified the Part deeply and dressed him.

No further treatment prescribed or carried out by Dr Sharpin and Mr Steward.

The fact that Dr Norford was present on the Sunday morning, and had been consulted for five days led to the termination of Mr Steward & Dr Sharpin's care of Mr Ralling. They alleged that Dr Norford had given the patient some Glysters (enemas) and claimed that Mr Ralling had put into the suppurative Cataplasma the 'cooling Ungent of Poplar Buds, instead of the warmer medicine, Basilicon'; and also he neglected to have the Cummin Cataplasma prepared. Dr Norford claimed that Mr Steward had some some Cummin Poultice at his house, but Mr Steward said that Mr Ralling knew he had none, nor the ingredients for it, having used it all about a month before.

Quincy's English Dispensatory, 1749, gives the formula for the Cataplasm of Cummin Seed as:- 'Take of Cummin Seed ½lb, bay tree leaves, leaves of scordium and snake root, each 3ozs, cloves 1oz, the species being powdered make them into a cataplasm with thrice their weight of honey'; whilst making the 'cooling ointment of Poplar Buds' was a rather more complex task – 'Fresh black Poplar buds 1½lb, leaves of violet and navel wort of the wall, each 3oz, fresh unsalted hog's lard cleaned from its membranes, and washed, 4lbs; bruise, mix and macerate these together. Add the leaves of bramble, leaves of black poppies, mandrake, henbane, night-shade lettuce, the greater house leek and the greater burdock of each, 3oz; bruise again and mix all together very well and then after ten days standing pour on them a pound of rose water, after which boil over a gentle fire, continually stirring with a spatula until all the superfluous humidity is evaporated, drain and squeeze out with a press to obtain an ointment'.

Steward and Sharpin further argued that because Ralling 'had neglected to take the Decoct. Sacrum, or some other warm Cordial Medicine and by Norford loosening the bowel by untimely cooling Glysters, the ulcer was turned into a critical Gangrene'.

Quincy gives 'Decoction Sacrum, the Holy or Sacred Decoction – Take Virginian Snake Root in powder 6 drachms, boil it in water, 1lb to ½lb, strain and reserve the liquor by itself; boil the remainder in 1lb more of water, half away, as before, adding at the latter end, Cochineal 10 grains. Strain and mix the liquors together, dissolve there-in, Venice Treacle ½oz, Honey 1oz, and then strain for use.....Dr Fuller commends this much for ...depressing fevers....where the complexion is pale, there is a low ticking pulse and sometimes a clammy skin – this is a most useful medicine'. Mr Stewart later expressed surprise that Dr Norford should query Dr Sharpin's use of the Decoct. Sacrum rather than the Bark saying that 'I am sure that some very experienced Practitioners must think that Dr Sharpin made a very judicious Distinction between these two medicines in giving preference to that warm Cordial, the Decoction Sacrum'.

Regarding the use of the Blister, apparently at Mr Steward's suggestion, Norford later wrote 'People might well be dissatisfied to see you (Dr Sharpin) rely so much on another's opinion as to take in a "Spanish Leagion" to the assistance of the sinking state'. Presumably the blister was *Emplastrum Lyttae, Plaster of the Spanish or Blistering Fly*, of the London Pharmacopoeia.

As the Cummin Cataplasm was not forthcoming, on Sunday the 22nd, Norford ordered that Theriaca Andromachi with some Pulv. Camphorae to be in readiness, but this was not used as Mr Steward did not 'think it proper to apply this on account of the opium in it'.

Some of the antipathy and hostility shown towards Dr Norford stemmed from the considerable difference in education and background between him and Sharpin & Steward. Dr Sharpin had been educated at Cambridge University and then had the classical medical education at Leyden, studying under the greatest clinical teacher of the 18th century, Hermann Boerhaave, and the famous anatomist , Albinus. He then returned to London for further studies as a pupil to Dr Hall, Physician at St Thomas's Hospital.

Thomas Steward, was educated at the Grammar School in Bury St Edmunds, was apprenticed to a Surgeon and then attended lectures at St Thomas's & Guy's Hospitals, including those by the famous Obstetrician, William Smellie. It is reputed that during Smellie's 10 years in London 900 pupils attended his classes and along with these pupils he attended 1,150 cases of labour.

Norford, by contrast had spent most of his time in the small Suffolk town of Halesworth, from where he had recently moved to Bury St Edmunds, he claimed that he practised as a physician under the authority of the College of Physicians, a statement that was disputed by Steward. In his reply, published in October 1764, he stressed at the beginning this difference in education, saying he had not, to his regret, had the opportunity of studying at Cambridge and told Dr Sharpin – 'You were born, dear Sir, no doubt, and educated only to prescribe and give directions by a dash of the quill, nature never intended a man of your ability should condescend to do what I have done. You have told me yourself, when I had the honour of being familiar with you, that you could not stoop so low as to hold your nose over a still'.

Norford then proceeded to give his version of the facts of the case, challenging many of Sharpin and Steward's findings. In his case history he asserted that the patient was seldom afflicted with the piles and never to any great degree, the fever mentioned, he had contracted from some soldiers he was treating who 'were ill with a fever little inferior to the plague'. A month before the present case he was extremely constipated and a week before 'felt such pain that he sometimes thought his very bowels would drop from him'. When Norford called on Ralling on the Wednesday evening, the 18th July, it was as a friend and not in his capacity as a surgeon, he was begged to take on the case as Ralling was very alarmed that Steward wanted to catheterize him. In the early hours of the next morning he was sent for as there had been a total suppression of urine for some hours, later, on examination he found that the perineum 'was much more swelled than you mention and was laid out like the crown of a man's hat', the patient in great pain, and the pulse 'so weak and low that he almost dead' with 'both passages stopped, he could not go to stool and he could make no urine'. On account of the amount of swelling it was impossible to give an enema and dangerous to attempt to pass a catheter, examination revealed no sign of haemorrhoids, but Norford found 'a disease of the very idea of which is so nasty and the name too gross to be wrote in plain English unless I was writing to a Farrier' and 'fit only for the sight and hands of one whose education has been low and vulgar enough to teach him not to mind ********* his fingers when the life of the patient cannot be saved by any other means'.

Ralling, apparently had a great mass of impacted faeces and it being essential to remove this 'to save the bowel and perhaps the neck of the bladder from a fatal gangrene' Norford ran home to collect an instrument for this purpose, what it actually was is not disclosed but with it 'he bored through the hard excrement and forced up an injection composed of ingredients to loosen the faeces and act as a fomentation'; this he claimed gave instant relief, Ralling exclaiming that it made him feel 'as if he had been in heaven'.

On subsequent visits more of the impacted faeces were removed, life in the Ralling household must have been unpleasant that midsummer week, Norford describing 'the faeces were very hard and extremely foetid and the room was so disagreeable, we were obliged, several times to sprinkle it with hot vinegar and use every other means against the most intolerable stench'!

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Norford continued to call daily for another week, he described how a large portion of the gluteus maximus of the left buttock was destroyed and also some on the right and the 'mortification extended from the lower part of the Os Sacrum (deep down close to the gut) as far as the bottom of the scrotum, carrying away a great deal of the perineum and a great part of the rectum and uretha laid bare so much that if any dressing were put on the least too hard they stopped the passage of the urine'. On the 26th of July he reported that at least a pound weight 'of the great muscle of the left buttock had sloughed off'. By the 29th the pulse 'was fuller and stronger, the urine a better colour and bowel quite freed of its load' and the patient well on the way to recovery.

Dr Norford concluded his Appeal by denying that he ever said that without his intervention Ralling would have been dead in a few hours but he thought it likely he might have been in a few days.

It was now Steward's turn to publish his appeal, he added little new to the saga, he made it very clear that his opinion of Dr Norford was very low! He particularly disagreed with Norford's evacuation of the bowel, this he claimed weakened nature further and 'had the faeces not been evacuated they would 'have served as an active cataplasm to defend the parts against a Gangrene'!

John Ralling himself published in the Ipswich Journal of 6th October 1974 a strong defence of Dr Norford's treatment and clearly thought he owed his life to him, and reading the facts now, some two hundred years later it is difficult not to agree with him.

John Ralling survived and continued his profession of apothecary for many years; the Minute Book of The Guardians of the Poor of Bury St Edmunds for 1782 had the following entry 'At this Court, Mr John Ralling, Apothecary, having offered to take under his care and provide Medicines for all such Poor People, as well those out of, as within the Workhouse that shall fall sick and receive relief of the Corporation, for the sum of Sixty Guineas a Year. it is agreed that the said offer be accepted and the said John Ralling do immediately enter upon the said Office and that the Treasurer do pay him the said Salary, Thursday 7th January, 1782'.

For the annual salary of Seven Pounds, , Six Shillings and Eightpence, Thomas Steward in 1765, at a similar Court of the Guardians, 'agreed in Fractures and all other Surgery Cases, (Venereal included) to look after and administer all outward (but no inward) Medicines to all the Poor.....'

Dr Norford died in March 1793, aged 71, the Bury & Norwich Post of the 27th March reporting...'On Friday last.....Dr Norford, whose physical practice for more than 20 years, makes his loss no less regretted by all who are living a grateful witness of his emminence, than lamented by those who daily experienced his humanity'.

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Note: Year is followed by Vol. number and No. of issue. Each article is numbered to facilitate reference under Author.

Author Index

OBITUARIES

Alan Hoyle Briggs FPS died on October 16.
Elected an auditor of BSHP in 1981 he conscientiously carried out the duty until his illness last year. Alan Briggs will be remembered for his pleasant unassuming manner and his willingness to freely share a wide experience and knowledge gained in hospital and community pharmacy and as commercial manager of Ciba-Geigy.

William Somerville Tait, MPS, DBA died on October 22.
Mr Tait was a member of the Executive of the Pharmaceutical Society's Scottish Department from 1960-1973 and a former member of the Scottish History of Pharmacy Committee. An active supporter of BSHP, members will recall the paper "A Chemical Cottage" which he gave at the Oxford Spring Conference in 1985.

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